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NURSING GOALS FOR THE DECADE

Analysis of the Situation in Seventeen Countries

Introduction

The Pan American Sanitary Conference which met in October 1974 adopted Resolution XXVIII on "Nursing Goals for the Decade" (see Annex II), taking into account the goals defined in the Ten-Year Health Plan for the Americas.

The delegates to the Conference concluded that, as nursing services are a fundamental component for the provision of health care, neither the goals of the Ten-Year Health Plan for extending health service coverage nor those for the specific programs could be attained unless the health system had the quantity and quality of nursing resources needed. Intensification of efforts will be required to prepare the additional numbers and types of nursing personnel needed, concurrently increasing the number of positions in the health system for the absorption of the graduates.

The Conference requested the Secretariat to report to the next meeting of the Directing Council on these actions. Taking the foregoing into consideration, the Pan American Sanitary Bureau prepared a questionnaire to be completed by the countries, which dealt with the following aspects: 1) the needs of the services for nursing personnel to achieve the goals; 2) the trend in the establishment of nursing positions since the beginning of the decade; 3) the nursing personnel production, and 4) the compatibility of the curriculum content of the nurse and nursing auxiliary educational program with the functions they perform in the services.

Seventeen out of the 25 countries to whom the questionnaire was sent replied; 14 of these were Spanish-speaking, one French, one Portuguese and one English.

A summary of the findings and conclusions of the analysis of the data contained in Annex I follows.

### Summary of Findings and Conclusions

Of the 17 countries responding to the questionnaire, 16, or 94 per cent, had defined goals on the number of nursing personnel needed in 1980. Eleven out of these 16 also had production goals on the number of nurses to be prepared and 10 had them for nursing auxiliaries. Only six countries provided complete data on the number of students being admitted and graduating. Eleven gave some, but incomplete, information on positions created over the last five years. Few, if any, of the countries provided all the information requested, and in the data of many countries there were marked inconsistencies between the estimates made of nursing personnel needed in relation to the number existing, and to what is occurring in the sector preparing the personnel. This leads one to conclude that in many countries the essential data is not being utilized by the group determining the health manpower goals in order to establish realistic goals and plan for their achievement. There also appears to be a lack of coordination between the group establishing the nursing personnel goals and the educational sector.

Only two countries, Panama and Uruguay, established 1980 goals for nursing personnel which surpass the ratio of 19 per 10,000 inhabitants defined in the Ten-Year Health Plan for the Americas. As to the 4.5 ratio set for nurses, the goals of only five countries--Costa Rica, Guyana, Nicaragua, Panama and Venezuela--are higher. In fact, three other countries defined goals for nurses resulting in ratios lower than what existed in 1972. As to nursing auxiliaries, only Panama and Uruguay set goals for 1980 superior to the 14.5 ratio of the regional goal. The projected 1980 ratio for nursing auxiliaries for seven countries is less than that existing in 1972.

The decrease in ratio is not attributable to the limited scope of the agencies included because 12 countries incorporated the needs of one or more institutions outside the Ministry of Health. Fifty-seven per cent of countries with social security institutions included the needs of this agency for personnel in 1980.

Of the 11 countries which established production goals, in eight there are marked discrepancies between the 1980 estimates of nurses needed by the country and the goal set on the number to be produced. Four countries' goals are lower than what would be needed to prepare the nurses stipulated as required in 1980.

For countries that overestimated their production goal, this will be counteracted by the deficit in the number currently being prepared. However, five out of the 11 countries--Dominican Republic, Guatemala, Panama, Nicaragua and Venezuela--which set production goals either because of subestimation or deficits in the number currently being produced, will not attain their nurse goal if the present trends in the preparation of nurses continue.

As to the nursing auxiliary goals, it was possible to analyze the data on only seven of the ten countries which had established production goals. Three countries were eliminated because their 1980 ratio of the nursing auxiliary goal is inferior to what existed in 1972. Of the seven countries remaining, six had marked discrepancies between the nursing auxiliary goals and the production goal. As in many countries the preparation of this group is the responsibility of the Ministry of Health, there appears to be a lack of coordination, even within the same institution, between those making the estimates and those preparing the manpower. Two countries, Guatemala and Nicaragua, due to the current trend in production and because of subestimation of the production goal, will not achieve the nursing auxiliary goal established. Colombia and Paraguay also will not attain the goal because of the deficit in production.

A major contributing factor to the above might be that only one country stated that the resources needed had been provided and 10 replied that they had been only partially provided.

Nine out of the 16 countries which had established nursing personnel goals for 1980 stated that they had been approved by the national authority. Nine countries also stated that they had been incorporated into the health plan and, in five, also into the educational plan. This process apparently does not include funding, which raises some question as to how the health plan objectives will be achieved if the nursing personnel required to deliver the care is not available.

One must conclude, therefore, that unless the governments take deliberate action to modify the current situation in at least seven out of the 11 countries that have also established production goals, personnel goals established for 1980 will not be achieved. It might also be concluded that a similar situation exists in many of the remaining countries which did not provide detailed information or did not reply to the questionnaire.

Two countries out of the 17 contemplate preparing nurses at two levels of educational program, while six stated that they will continue with one level. Six countries differentiated between the general nursing auxiliary and that required for rural areas. In 12 countries, the functions of nurses and auxiliaries have been defined but are being implemented in only six.

Eleven countries provided some information on the number of new positions created over the last five years. A trend was observed of an increase each year in the number being created in seven countries for nurse positions and in six countries for nursing auxiliaries. However, absorption into the services of the additional nursing personnel needed to reach the 1980 estimates has great economic implications for some countries, such as the Dominican Republic, Bolivia, Guatemala, Guyana, Panama and Uruguay, comparing the increase with the number currently being funded.

Nine out of a possible 17 countries reported that a mechanism exists to coordinate the education and service sectors. However, the group which made the estimates in seven countries consisted of nurses from education and services. In three, the estimates were made by a multiprofessional group and in three others by health authorities without nursing representation. Three additional countries used more than one group. Analyzing this data for the seven countries previously mentioned as possibly not achieving their goals, in four it had been the group from education and services, in two the health authorities alone, and in one a multiprofessional group.

In summary, it appears that governments are taking measures to define nursing personnel goals, but it seems that coordination between the health, education and economic sectors must be strengthened, as well as within the health sector itself, in order to transform their definitions into reality. The group making the estimates should ensure the availability of information that will provide it with a comprehensive view of what is occurring in the nursing manpower sector.

Due to the seriousness of the situation, the complexity of the problems and the implications for the future development of the health care system, governments should take direct action to modify the present situation. They should ensure the establishment of a process that results not only in better estimates of nursing personnel needed but also in the development of a system for the preparation of nursing personnel with the capacity to prepare the number and type required. Finally, the process established should ensure that the number prepared are absorbed into the services.

Annexes

## NURSING GOALS FOR THE DECADE

### Analysis of the Situation in Seventeen Countries

#### I. GOALS OF NURSING PERSONNEL ESTABLISHED FOR 1980

Of the 17 countries which replied to the questionnaire, 16 had made estimates of the number of nursing personnel needed in 1980. Data on the existing and projected needs of the country for nurses and the current and required yearly production of graduates is shown in Table 1 for nurses, and in Table 2 for nursing auxiliaries.

Analysis of Tables 1 and 2 raises the question of whether some of the countries interpreted the item on "Nursing Personnel Goals for 1980" correctly, as some ratios per 10,000 population that are to be attained are lower than those existing in 1972, such as those for nurses in Bolivia, Peru and Paraguay. Seven countries also have decreased ratios for auxiliaries; in four, Brazil, Chile, Costa Rica and Venezuela, it is appreciable. It is possible that the number given for 1980 represents additional rather than total nursing personnel needed. On the other hand, the figures could reflect the needs of only a few select agencies, such as the Ministry of Health, or it could be that the methodology used to make the estimates is deficient.

The goal established in the Ten-Year Health Plan for the Americas is 4.5 nurses and 14.5 nursing auxiliaries per 10,000 inhabitants. This ratio had been given as a minimum for the provision of safe nursing care or, in other words, a level of care that does not jeopardize the health or life of the patient or individual. Table 1 shows that only five countries, Costa Rica, Guyana, Nicaragua, Panama and Venezuela, made projections for nurses resulting in a ratio which surpasses the 4.5 per 10,000 goal. The remaining 11 countries' goals range between 1.0 and 4.2, with the three countries previously mentioned establishing ratios lower than those existing in 1972.

The situation is even more critical when one compares the actual average number of nurse graduates with the number that should be produced to achieve the 1980 goal. It is evident that six of the 13 countries which provide data have little or no possibility of producing the projected numbers with their existing system of nursing education and its resources. They are among the 10 countries who reported that the resources needed had been only partially provided.

Only one country, Paraguay, stated that the resources needed had been assigned, but there is only a small increase in the total number to be added between 1972 and 1980. Five other countries replied negatively to the same question. Of the ten indicating partial provision, two countries indicated

TABLE 1

Existing Nurses and 1980 Nurses' Goals for Nurses with Ratios per 10,000 Population and Current and Required Yearly Production

COUNTRY	Number of nurses around 1972	Goals for 1980	Ratio per 10,000		Number to be produced according to goal (a)	Average production		Annual Number of students admitted 1972-1974
			1972	1980		Current 1972-1974	Required	
Bolivia	853	898	1.6	1.5	45	52	6	...
Brazil	8,152	34,000	0.9	2.7	25,848	692	2,350	4,903
Chile	2,324	5,277	2.3	4.3	2,953	1,000	422	1,539
Colombia	2,700	4,204	1.2	1.4	1,504	234	188	451
Costa Rica	870	1,880	4.6	7.1	1,010	107	140	160
Dom. Rep.	317	2,360	0.7	3.9	2,043	25	255	72
El Salvador	974	...	2.6	...	...	...	...	...
Guatemala	751	2,112	1.4	3.1	1,361	54	151	80
Guyana	641	925	8.5	9.3	284	...	36	114
Haiti	407	690	0.8	1.0	283	...	35	104
Mexico	10,230	25,800	2.1	3.6	15,570	1,090	1,557	1,208
Nicaragua	469	1,285	2.4	4.6	816	49	102	99
Panama	1,059	2,022	7.0	9.8	963	28	133	125
Paraguay	309	327	1.2	1.0	18	32	2	48
Peru (b)	5,040	4,033	3.5	2.2	(-1,007)	612	0	...
Uruguay	988	1,368	3.4	4.2	380	...	42	...
Venezuela	7,965	14,292	7.3	9.5	6,327	624	791	1,517

(a) This does not take into consideration losses by retirement.

(b) In Peru the indicated goal might refer to the additional number of nurses required and to the total number needed in 1980. Under these circumstances the ratio of nurses per 10,000 would be 4.9 and the annual estimate production 504.

TABLE 2

Existing Nursing Auxiliaries and 1980 Goals with Ratios per 10,000 Population and Current and Required Yearly Production

COUNTRIES	Number of auxiliaries 1972	Proposed Goal 1980	Ratio per 10,000		Increase 1972-1980	Annual production	
			Existing 1972	Expected 1980		Required (2)	Actual
Bolivia	859	4,976	1.7	8.3	4,117	515	81
Brasil	104,260	93,800 (1)	11.2	7.6	-10,460	0	1,869
Chile	19,527	17,004	18.9	13.9	-2,523	0	1,486
Colombia	14,990	29,478	6.7	9.8	14,488	1,811	1,417
Costa Rica	3,180	2,368	16.8	8.9	-812	0	229
Dom. Rep.	3,012	3,400	7.0	5.6	388	49	99
El Salvador	2,664	...	7.1	...	...	66	...
Guatemala	3,673	8,062	6.9	11.8	4,389	488	60
Guyana	510	724	6.8	7.3	214	27	50
Haiti	1,086	1,620	2.1	2.4	534	67	58
Mexico	26,620	93,200	5.4	13.1	16,580	6,658	830
Nicaragua	1,915	2,965	9.6	10.5	1,050	131	...
Panama	2,119	4,044	13.9	19.6	1,925	241	...
Paraguay	813	1,622	3.1	4.7	809	101	27
Peru	11,357	11,163	7.9	6.0	-194	0	306
Uruguay	5,956	6,028	20.4	18.6	-72	0	...
Venezuela	17,702	5,280	16.2	3.5	-12,422	0	469

(1) Includes number of "atendentes"

(2) Does not take into account the number required to replace those who retire from the active work force.

TABLE 3

Distribution of Countries According to Action Taken on the Estimates  
 of Nursing Personnel for 1980

Q U E S T I O N	Number of countries			
	Yes	No	Partially	Not stated
The estimates made were approved by the appropriate authority	9	1	6	
The estimates were incorporated into:				
- National Health Plan	9	2	5	
- Education Plan	5	5	3	3
The resources (financial, physical, human) needed to achieve goals were provided	1	5	10	



the assignment of resources on a progressive basis, while others stated that it would depend on the availability of funds. One country stated that there was absolutely no assurance that funds would ever be available. Another country stipulated the shortage of qualified teachers as the major problem. The whole picture is somewhat bleak considering that even though the estimates had been incorporated into the health plan by nine countries, as shown in Table 3, and into the education plan by five, this did not result in the provision of funds to develop a nursing education system with the capacity to produce the numbers of personnel estimated as needed in 1980.

The estimate for nurses for 1980 established by Chile, and data on production, shows that already twice as many nurses are being graduated as would be required to attain the goals set by the country for 1980. Similarly in Peru, even if the number of nurses specified in the goal is additional personnel required, the current production already exceeds by 108 what would be needed for the decade.

Five countries--Brazil, Costa Rica, Dominican Republic, Panama and Venezuela--contemplate two levels of preparation for nurses: a higher and intermediate level.

- Higher educational level refers to nursing education programs which award diplomas or academic degrees and in which admission prerequisites include complete secondary schooling, and have a duration of two-and-a-half years or longer.
- Intermediate and technical level refers to three types of programs:
  - 1) those within the secondary school system which provide the option to study nursing and have a duration of two to three years;
  - 2) three-year diploma programs with an admission requirement of nine years previous schooling; and
  - 3) programs with an admission requirement of complete secondary education, but with a duration of two years or less.

Three of the five countries which indicated preparation of nurses at two levels of education are among the five that established ratios for 1980 that surpass the regional goal of 4.5 nurses per 10,000 inhabitants.

Six countries--Chile, Guatemala, Guyana, Haiti, Mexico and Paraguay--indicated that they plan to continue with one level of nurse education.

As to nursing auxiliaries, data in Table 2 shows that only two countries, Panama and Uruguay, have established goals which surpass the 14.5 per 10,000 figure contained in the Ten-Year Health Plan. Estimates by Chile, Guatemala, Mexico and Nicaragua range between 10 and 13.9 nursing auxiliaries per 10,000 inhabitants.

However, the current production of auxiliaries in both Guatemala and Mexico is so low that it would be almost impossible to achieve the 1980 goal. The same comment is pertinent to the situation of Bolivia and Paraguay, even though their goals are well under 14.5 per 10,000. Unless these governments take specific measures to alter the current pattern and provide funds to develop a system capable of producing the number of nursing auxiliaries needed, they will fall far short of their established goal.

Brazil, Chile, Costa Rica, Peru and Venezuela are producing more auxiliaries than estimated as needed but, as stated previously, the question was misinterpreted or the figure represents an underestimation of the true need.

Six countries--Brazil, Chile, Costa Rica, Dominican Republic, Uruguay and Venezuela--also have specified their requirements for rural auxiliaries, differentiating them from general auxiliaries.

The following Table 4 presents data on the scope of coverage of agencies and completeness of the estimates.

TABLE 4

Distribution of Replies of Seventeen Countries to Questions on the Scope and Completeness of the Estimates of Nursing Personnel Needed

I T E M S	Number of countries				
	Yes	No	Partially	Not stated	Not applicable
1. The country has defined ten-year goals.	13	1	1	2	
2. Estimates of nursing personnel needed for 1980 have been made.	16	1	-	-	
3. These estimates are based on health program needs.	10	2	5	-	
4. The estimates include needs of institutions outside the Health Ministry:	12	3	2	-	
4.1 Social Security	8	2	-	5	2
4.2 Private, non-profit	7	4	-	6	
4.3 Private, profit	6	5	1	4	1
4.4 Education sector	8	5	-	4	
4.5 Others	2	5	-	10	

Twelve countries included in their estimates the needs of agencies outside the Ministry of Health. Seven of these 12 are countries with ratios for nursing personnel in 1980 inferior to those that existed in 1972. The eighth country replied that the public agencies had been included but not the private sector. The estimates of two, Guatemala and Haiti, only include the needs of the Ministry of Health. Eight countries included the needs of the Social Security institutions.

Analyzing the foregoing data for each country that had inferior ratios for 1980, the cause for reduction in ratio does not appear to be due to limitation in the scope of agencies included in the estimate.

Ten countries stated that their estimates were based on health program needs but five others stated that they were only partially based on health program needs, as one or more of the following was taken into consideration as well: population increase, extension of services to improve coverage, number of beds and production capacity of the schools.

One must conclude, however, that projections of nursing personnel are underestimated for at least 38 per cent of the above countries, because of lack of inclusion of the social security agency which absorbs a high proportion of personnel.

The inconsistency between the goals proposed and current yearly number of nurses and nursing auxiliaries being produced would indicate a lack of coordinated planning between the groups establishing the goals and the educational system which prepares the nursing personnel.

Five alternatives (see Table 5) were given in the questionnaire as to the composition of the group of individuals making the estimates.

Thirteen countries indicated that only one group had made estimates, while three indicated the use of two or three groups. As the types of groups listed are mutually exclusive, one must conclude that in three countries two or three different estimates on nursing personnel may have been made. Five countries reported that these estimates were made by the health authorities alone without representation of the nurse group.

TABLE 5

Distribution of Countries by Type of Group or Groups Estimating Nursing  
 Personnel Needs in 1980

Type of Group or Groups Utilized	Number of Countries
a) Nurses from services (only)	0
b) Nurses from education and services (only)	7
c) Interprofessional Committee	3
d) Health authorities without nursing representation	3
e) Education authorities without nursing representation	0
Using both (a) and (d) groups	1
Using (a) (b) and (c) groups	1
Using (b) (c) and (d) groups	1

There seems to be no relationship between the composition of the group used and the adequacy of the estimates. However, considering the interrelationship of the functions of the different members of the health team and the need for the realignment of these, if we are to maximize the use of the limited manpower resources it would seem essential that the group determining health manpower needs, including those of nursing personnel, have a multiprofessional composition. This group should be responsible to both the health and education sectors.

The discrepancies and lack of consistency between the data on actual nursing personnel and future needs, and between the latter and current rate of production of nursing personnel, leads to the conclusion that many countries have a fragmented approach to determining their nursing personnel requirement. In many instances they do not reflect the total needs of the health sector and, therefore, in most countries the estimates are inferior to what actually will be required in 1980. One also questions whether the countries have given sufficient consideration to the composition as to type and proportion of the nursing personnel structure required in 1980. Finally, in the majority of countries it would appear that in establishing goals little or no consideration has been given to analyzing the current production of nurses and nursing auxiliaries and its impact on the supply of nursing personnel available in the future.

II. PRODUCTION OF NURSING PERSONNEL

TABLE 6

Number of Countries with Production Goals for Nursing Personnel

Category of Personnel	Number of Countries			Total
	With goals	Without goals	No reply	
Nurses	11	2	4	17
Nursing auxiliaries	10	3	4	17

It is interesting to note that although 16 countries have established estimates on the number of nursing personnel required by 1980, only 11 stated that they had established goals for the production of nurses, and 10 countries for nursing auxiliaries. Only six countries--Colombia, Costa Rica, Dominican Republic, Guatemala, Paraguay and Venezuela--could provide the information requested on admission of students and graduates for both nurses and auxiliaries.

A. Production of Nurses

Table 7 compares the increase in number of nurses required to attain the 1980 estimates of nurses needed with the goals established for their production for eight countries providing data.

TABLE 7

Additional Number of Nurses Needed to Attain the Proposed Personnel Goals and the Production Goals for Eleven Countries Reporting

Country	Additional Number of Nurses Required	Production Goals	% Difference between required and production goal
Colombia	1,504	3,036	102
Costa Rica	1,010	1,440	43
Dom. Republic	2,043	905	-56
Guatemala	1,361	734	-46
Guyana	284	1,071	277
Haiti	283	778	175
Nicaragua	816	738	-10
Panama	963	920	-4
Paraguay	18	245	1,261
Peru	0	4,222	-
Venezuela	6,327	6,963	10

Table 7 demonstrates that six countries have production goals that considerably surpass the goals established for 1980 on nurses required. Four countries have inferior production goals; for two of these it represents a marked difference.

The foregoing indicates a lack of coordination between the system of education and the group who determined the needs of nursing manpower, with perhaps the exception of Venezuela.

TABLE 8

Production Goal for Nurses and the Current and Required Yearly Production

Country	Production-Goals 1972-1980	Average Annual Production			% Deficit in Current Production
		Required	1972-1974	Student Admission 1972-1974	
Colombia	3,036	380	234	451	38
Costa Rica	1,440	206	107	160	48
Dom. Rep.	905 <sup>(a)</sup>	151	25	72	83
Guatemala	734	82	54	80	34
Guyana	1,071	134	...	114	-
Haiti	778 <sup>(b)</sup>	97	...	104	-
Nicaragua	738	123	49	99	60
Panama	920	115	28 <sup>(c)</sup>	125 <sup>(c)</sup>	78
Paraguay	322	40	32	48	20
Peru	4,222	528	612	...	0
Venezuela	6,963	870	624	1,517	28

(a) Production goals for six years

(b) Production goals for nine years

(c) Incomplete data referring to a single school

Table 8 compares the average annual production of nurses with that which is required yearly to achieve production goals and with the average number of students admitted over the last three years. As you will note, eight countries will have to increase the number of nurses they graduate each year to achieve the production goal, and for six it also means an increase in the number of students to be admitted.

For three of the countries, Dominican Republic, Guatemala, and Nicaragua, and possibly a fourth one, Panama, this deficit in production will produce serious consequences, considering that their production is already below that required to provide the nurses estimated in the 1980 nursing personnel goal, as indicated in Table 7. Even though Venezuela's production goal is higher than what needs to be produced, because of the deficit in current production it is questionable if it can attain the 1980 goals.

#### B. Production of Nursing Auxiliaries

In Tables 9 and 10, information is presented on the preparation of nursing auxiliaries. Table 9 presents the goals for the production of nursing auxiliaries that were established by 10 countries and the number of auxiliaries required to achieve the proposed goals for 1980.

The possibility of error in the information provided by Costa Rica, Peru and Venezuela on the number of auxiliaries needed in 1980, as indicated in Table 2, impedes the analysis of the relationship between the goals for the auxiliaries required and the production goals of these countries.

TABLE 9

#### Number of Nursing Auxiliaries Required to Attain the 1980 Goals and the Production Goals

Countries	Number of Nursing Auxiliaries Required	Production Goal	% Difference Between Required and Production Goals
Colombia	14,488	15,546	7
Costa Rica	0	619	-
Dom. Rep.	388	1,170	356
Guatemala	4,389	1,305	-70
Guyana	214	756	253
Haiti	534	1,545	189
Nicaragua	1,050	738	-30
Paraguay	809	1,100	36
Peru	194	8,320	-
Venezuela	0	3,976	-



Table 9 shows the discrepancy between the production goals and the number of nursing auxiliaries required for the Dominican Republic, Guatemala, Guyana, Haiti and Nicaragua, and somewhat for Paraguay. This difference is even more noteworthy considering that the institution responsible for the production of this personnel is usually the same one responsible for the establishment of the 1980 goals for nursing personnel. This could indicate a lack of coordination within the same institution.

In Table 10 a comparison is made between the proposed production goals with current and required yearly production.

TABLE 10

Production Goals for Nursing Auxiliaries and the Current and Required Annual Production in Ten Countries Reporting

Country	Production Goals	Average Annual Production			% Deficit in Current Production
		Required	1972-1974	Admissions 1972-1974	
Colombia	15,546	1,943	1,417	1,591	27
Costa Rica	1,550 <sup>(1)</sup>	258	229	276	11
Dom. Republic	1,170	195	99	110	49
Guatemala	1,305	163	60	88	63
Guyana	756	95	50	83	47
Haiti	1,545	193	58	81	70
Nicaragua	738 <sup>(2)</sup>	123	73 <sup>(3)</sup>	...	41
Paraguay	1,100	138	35 <sup>(3)</sup>	44	75
Peru	8,320	1,040	305	...	71
Venezuela	3,976	497	469	558	6

(1) Goal proposed for the period 1970-1975

(2) Goal proposed for the period 1975-1980

(3) Average for two years (1973-1974)

The foregoing demonstrates that in all countries the average production for the years 1972-1974 is below what is needed to achieve the production goal. The percentage deficit ranges from 6 to 75.

Taking into account the information contained in Table 9, unless definite measures are taken to alter the current situation on production of nursing auxiliaries, Guatemala and Nicaragua will fall far short of their goal, and to a lesser degree Colombia and Paraguay.

C. Yearly Average Attrition Rate of Students in the Different Programs

The estimated percentage of students in schools of nursing who abandon their studies before the conclusion of the program varies between 5 and 50 per cent for the 10 countries which provided information. The highest percentages are concentrated in five countries: Colombia, Dominican Republic, Chile, Nicaragua and Guatemala. The existing information shows that there is no connection between the percentages of attrition and the level of the educational program and the agency controlling the program. The attrition rates of the intermediate level programs range between 46 and 15.4 per cent. The lowest rates encountered, with the exception of Colombia and the Dominican Republic, pertain to the university programs.

With reference to the auxiliary programs, where one would suppose the attrition rates would be much lower, there are no significant differences as the estimated rate in 11 countries ranges between 32 and 5 per cent.

In spite of the fact that the existing data is estimated and therefore consistency cannot be measured, it is considered important that those countries with high attrition rates endeavor to identify and analyze the causes. These rates must also be taken into consideration when establishing the production goals.

D. Compatibility of Curriculum Content with the Functions the Graduate is Expected to Perform

Twelve of the 17 countries which replied to the questionnaire informed on the existence of defined functions for the different levels of nursing personnel and in general these were based on existing needs; eight mentioned that projected needs had also been considered.

However, only six countries considered that these functions had been completely implemented; five stated that they had been only partially implemented. All affirmed a differentiation in the functions of nurses with those of auxiliaries.

Four countries indicated the absence of defined functions, and one country did not reply.

As to the existence of some mechanism between services and education, to adjust the curriculum of the different programs to the functions required by services, nine countries affirmed the existence of such a mechanism; five replied in the negative to the questions; two did not respond; and one mentioned the existence of certain relationships between the two sectors. The coordinating mechanisms mentioned refer in general to committees at the national level between the Ministry of Health and the Association of Nursing Schools, as well as the participation of personnel from the services in curriculum planning committees and representation of the schools on committees of the Ministry of Health.

Only three countries have a joint plan or program to evaluate the work and utilization of the graduates from the courses, but this plan has not been implemented in even one country.

### III. CREATION OF NEW NURSING POSITIONS

Twelve countries replied to the question on the creation of new nursing positions over the last five years. The distribution of the countries according to the trends observed can be seen in Table 11.

TABLE 11

Trends Observed in the Establishment of Nursing Positions in 12 Countries

Type of Personnel	Number of Countries		
	Increase	Decrease	No Specific Trend
Nurses	7	2	3
Nursing auxiliaries	6	2	4

While there was an overall increase in the number of positions created in the period 1970-1974, there was no discernable trend to increase nurse posts in six countries and nursing auxiliary posts in seven countries.

Table 12 shows the average number of posts created annually for nurses and nursing auxiliaries and the corresponding number required to be created annually to achieve the personnel goals and the ratio between the two.

TABLE 12

Average Number of Posts for Nurses and Nursing Auxiliaries Created Annually 1972-1974, and Corresponding Numbers Required to Meet the 1980 Goal, with the Ratio of Required to Created Posts

COUNTRY	NURSES			AUXILIARIES		
	Annual Average Number of Positions <sup>(1)</sup>			Annual Average Number of Positions <sup>(1)</sup>		
	Created 1972-1974	Required 1972-1980	Ratio of required to created	Annually 1972-1974	Required 1972-1980	Ratio of required to created
Bolivia	33	6	0.2	155	515	3.3
Brazil	...	2,350	...	...	3,951	...
Chile	311	422	1.4	1,703	360	.2
Colombia	...	188	...	...	1,811	...
Costa Rica	127	144	1.1	320	116	.4
Dom. Republic	18	255	14.2	182	49	.3
El Salvador	42	...	...	66	...	...
Guatemala	18	151	8.4	96	488	5.1
Guyana	7	36	5.1	30	27	.9
Haiti	...	35	...	...	67	...
Mexico	...	1,557	...	...	6,658	...
Nicaragua	...	102	...	...	131	...
Panama	16	133	8.3	147	241	1.6
Paraguay	13	2	.2	53	101	1.9
Peru	354	-126	-.4	190	24	.1
Uruguay	2	42	21.0	22	8	.4
Venezuela	471	791	1.7	922	1,553	1.7

(1)

Positions are equated to people, that is, one nurse requires one position.

An analysis of Table 12 shows that five of the 11 countries that provided data on production--Dominican Republic, Guatemala, Guyana, Panama and Uruguay--must increase the number of existing nursing positions from five to 28 times if they wish to have the services of the nursing manpower estimated as required. For some countries the economic feasibility of creating these posts within existing health budgets is questioned. Deliberate action would be required to provide the additional funds required.

Similar comments could be made in relation to nursing auxiliary posts and the impact of duplicating or triplicating the number already being established yearly.

Only eight countries were able to provide data on post vacancies for nurses, which ranged from 1 to 9 per cent, while five countries reported on the auxiliary post vacancies, the range being from 1 to 13 per cent.

The information received on the loss to the manpower pool was somewhat unexpected, as it ranged from 0.5 to 28 per cent. The magnitude of the latter and the disparity of the answers creates doubts on the validity of the information.

Information on budget was incomplete or not meaningful and, therefore, was not included in the analysis.

RESOLUTION XXVIII

NURSING GOALS FOR THE DECADE

THE XIX PAN AMERICAN SANITARY CONFERENCE,

Taking into account the goals of the Ten-Year Health Plan for the Americas;

Bearing in mind that efficient nursing services are one of the principal channels for providing health care, and consequently its availability in quantity and quality directly affects the achievement of many health program goals; and

Considering the complexity of the problem confronting health authorities in providing patients with a level of safe nursing care as stipulated by the goals,

RESOLVES:

1. To recommend to governments that they re-examine the nursing manpower situation in relation to:
  - (a) The needs of the services in order to achieve the goals;
  - (b) The trend in the increment of nursing positions since the beginning of the 1970 decade;
  - (c) The actual nursing manpower production, its utilization, and the health system's capacity for absorption; and
  - (d) The compatibility of the curriculum content with the functions they perform in the health services.
2. To urge the governments to intensify efforts in this field and take the necessary measures to establish the nursing positions required to deliver the health care stipulated in the goals, and to increase nursing manpower production, primarily of personnel providing direct care to individuals, through the creation and strengthening of nursing education programs, the accelerated training of this personnel, and the provision of the resources needed.
3. To request the Director to review the assistance the Organization can give countries to carry out the foregoing and to report to the XXIII Meeting of the Directing Council on the progress made by the countries as of that date.

DEFINITIONS

1. Nurse prepared at the higher educational level:

Graduate of a diploma or an academic degree-awarding nursing education program (part of a university or not) in which admission prerequisites include complete secondary schooling, and the duration of the nursing program is two-and-a-half years or longer.

Nurse with a Baccalaureate and/or a Master's Degree in Nursing

2. Nurse prepared at the intermediate level, or nursing technician:

2.1 Graduate of a program offered within the secondary school, with option to study nursing, and having a duration of 2 to 3 years

2.2 Graduate from a three-year diploma school with an admission requirement of nine years of previous schooling

2.3 Graduate from a school with an admission requirement of complete secondary schooling, but with a program duration of two years or less

3. Nursing auxiliary:

Personnel with a formal course of six months to two years in which the admission requirement varies from full primary education to completion of Junior High School (a maximum of nine years of schooling)

4. Rural area auxiliary, health promotor, health auxiliary:

Personnel with inservice training or trained in short courses to work in rural areas

5. Nurses aide and attendants:

Personnel with on-the-job training to carry out housekeeping and some simple nursing tasks