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From State to market: the Nicaraguan labour market for health personnel

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Few countries in Latin America have experienced in such a short period the shift from a socialist government and centrally planned economy to a liberal market economy as Nicaragua. The impact of such a change in the health field has been supported by the quest for reform of the health system and the involvement of external financial agencies aimed at leading the process. However, this change has not been reflected in the planning of human resources for health. Trends in education reflect the policies of past decades. The Ministry of Health is the main employer of health personnel in the country, but in recent years its capacity to recruit new personnel has diminished. Currently, various categories of health personnel are looking for new opportunities in a changing labour environment where new actors are appearing and claiming an influential role. It may take more than political willingness from the government to redefine the new priorities in the field of human resources for health and subsequently turn it into positive action.

Introduction

By Central American political and social standards, Nicaragua is an odd country. In the late 1970s a wide social revolution overthrew a dictatorship led by Anastasio Somoza, which had been in power for more than 40 years (Lisenmeyer 1989). The regime was replaced by a socialist government headed by the National Liberation Sandinista Front (FSLN). The new government nationalized most of the country's industry, while a broad social policy in health and education began to be developed (Macleod 1990). During the early 1980s, counter-revolutionary guerrilla forces started the fight against the Nicaraguan government troops in a conflict which involved substantial international aid for each side (Lisenmeyer 1989).

In the early 1990s, the political scene began to change in Nicaragua as the socialist government opened the electoral system. After highly disputed elections, in 1992 a new government showing more interest in market-oriented policies was installed. In a new round of elections in 1996, the current government, still more oriented to market economy, took control. Thus, in the last 20 years Nicaragua has moved from a radical socialist government to a radical conservative, market-oriented government. No other country in Central America has experienced these changes within the period.

To further complicate matters, Nicaragua is a country divided into two regions. The Atlantic side of the country, which represents around 85% of the territory, contains only 39% of the population. The descendants of the original Indians and African slaves brought in the 18th century form the majority of the population in the Atlantic Coast territory. This territory is highly autonomous in legal and political terms but historical disputes over the land have created a sense of distrust of these citizens in the rest of the country.

The Pacific side contains most of the population. This population is mainly descended from Spanish colonizers of the 16th century. The Pacific Coast territory also contains most of the industry and agriculture. The total population of Nicaragua is around 5 million and the distribution of resources, including health resources, reflects significant differences between areas (INTEC 1995).

Health needs and health care in Nicaragua

Nicaragua is still one of the poorest countries in Latin America. Its health indicators reflect this fact. According to official figures, life expectancy in the country is 66.2 years while the fertility rate is five children per woman, one of the highest in the Latin American region. The infant mortality rate of 58 children per 1000 live births is one of the highest in Central America. A high rate of maternal mortality is present in the country with 160 per 100 000 born alive. The epidemiological profile is still regarded as pre-transitional with a high prevalence of transmittable diseases. However, chronic diseases, accidents and violence are increasing their prevalence. More than 28% of children suffer some degree of undernutrition; this is a severe problem, especially in rural areas where 45–49% of children are undernourished. Sixty-seven percent of this group have a degree of vitamin A deficiency, 29% are anaemic and 36% are deficient in iron (Ministerio de Salud 1993).

The health sector is mainly public and financed by general taxes. The Ministry of Health covers about 50% of the population, social security only 4%, while the remainder rely on

private services or have no access to formal health services at all. The social security sub- sector, with control of health care units in the major cities, was created in the Somoza period. In the Sandinista period all these units were passed to the Ministry of Health to create the Unified Health System (Barrett 1996), but the social security fund was still able to collect financial resources. In the same period the health services structure was modified to provide emergency health care as a consequence of the war (Garfield 1989; Smith 1995).

In recent years, the health sector has undergone major changes at all levels: from the operational level looking for new financing mechanisms that today characterize already some of the health units, to the strategic-organizational level in which the most important policy has been the decentralization of health services. This latter process was initiated during the Sandinista period with the creation of the Local Health Systems (SILAIS) (Braveman and Siegel 1987). On paper, these local systems were able to define expenditure priorities and to produce services according to that definition, using the money received from the central level. However, autonomy from central bureaucracy to take decisions at the local level has not been homogeneous throughout SILAIS and this has helped to create major disparities in their performance.

The social security system has started to finance health services again but under a new modality. Ten provisional health care units now provide services to the population covered by the fund, nine of them private. Only one of these units belongs to the Ministry of Health, the Políclinica Oriental. Special legislation must be passed to authorize the Políclinica Oriental to work under special conditions and compete with the rest of the units (República de Nicaragua 1995).

Health manpower policy developments

Without doubt all these changes will have an impact on the way that health personnel are trained, employed and regulated. In fact, the effects on the health personnel labour market have already been identified. It is known that, after the Sandinista Revolution, thousands of health workers, particularly from professional groups, left the country, leaving scarce resources for the production of services (Nelson and Nelson 1990). The data presented in Table 1 show that the medical profession was particularly affected by this. Although the figures in column 2 include both death and emigrant cases, the total percentage of lost cases (25%) is too high to be considered only the effect of natural deaths. The figure in the rest of the groups varies around 5–10%.[1]

During the Sandinista period a policy of training new personnel in order to staff the new unified care system was put in place. While this policy had a positive impact on the allocation of personnel (Sandiford et al. 1991) such as nurses (Lawton 1988) and village health workers (Bender and Pitkin 1987), it also had some negative effects that were not easy to tackle at the time and that are still present today. For example, Slater (1989) reported uneven quality of medical care as the main problem facing curative medicine in Nicaragua in the 1980s. This was caused by the difficulty of training an increasing number of new physicians.

At the present time there are no specific proposals about how the health system should face the future of its manpower. During 1996, two fora to discuss the situation of health manpower in the country were organized. The first was rich in technical discussions and generated some preliminary proposals. The second, in contrast, was organized to present to presidential candidates the proposals and positions of the different institutions and organizations involved in the discussion (Arguello and Marsal, mimeo). Neither meeting has resulted in follow-up proposals or action.

It is clear that the public sector, following a recent policy imposed by the Ministry of Health, has been reducing the volume of personnel included on its payroll. In parallel, other areas of services production are starting to emerge as important: on one hand, the broadening of the private sector in both the for-profit and non-profit segments, and on the other, the reactivation of social security as an important source of financing.

The ultimate target of health sector reform is to increase the efficiency of the available resources in the production of health services, taking into account both quality and allocation of

Table 1. Estimated universes of health manpower and alternative estimations by category

Categories	Initial estimated universe (1)	No. of estimated cases to be death or out of the country (2)	Adjusted universe (1) – (2)	Alternative estimation (PAHO 1998)
Doctors	4 570	1 151	3 419	3 725
Dentists	1 099	293	806	810
Pharmacists	1 099	230	869	–
Nurses	7 394	816	6 578	–
Auxiliary	–	–	3 328	3 978
Professional	–	–	3 250	–
Technicians	2 499	258	2 241	2 254
Total	16 661	2 748	13 913	13 500

Initial common universe was estimated for all nurses. Adjusted universes both for ancillary and professionals were obtained after the survey.
Source: Labour Market of Health Workforce in Nicaragua 1996. Ministry of Health/World Bank/Funsalud.

resources. However, according to some observers (Lane 1995), in practical terms reform has meant the slashing of health care budgets, cutbacks in staff and an increasing scarcity of medical supplies. Working conditions have been changing recently within the Ministry of Health structure (Fetsalud 1994; Ministerio de Salud 1995). Health personnel are experiencing low job stability due to Ministry policies to cut positions, maintain fixed salaries, and to reduce incentive payments to workers who choose to practice in underserved areas.

From this discussion stems the need to understand the current situation of the labour market and the factors that underlie the behaviour of both supply and demand of health personnel. The present paper also seeks to show the way the current economic, social and political conditions act for or against the possibility of evaluating what are both the positive and the negative consequences of the application of past policies.

Studies on health manpower in Latin America have shed some light on the structure of labour markets and its determinants. Pioneering studies in the late 1970s such as in Peru (Hall 1969) and Colombia (Hall y Mejía 1978), or more recently those carried out in Uruguay (Meerhoff and Lewis 1988), Brazil (Machado 1997) and Mexico (Frenk et al. 1999), have shown the modalities of interaction between supply and demand forces within the context of specific health care systems, and the difficulties that each one of them has had to attain the best match between the production of human resources for health, the institutional requirements, and the population needs.

Few post-reform studies of human resources for health have been carried out in Latin America since most of the countries are still in the early stages of the process (PAHO 1998). Among these few countries is Chile, which started the reform of the public, universal-coverage system in the early 1980s. The reform brought about an increasing role for the private sector in the financing and provision of services. A recent assessment shows how the labour market of health workers in Chile changed the nature of a regulated public system to allow the logic of the market which today controls a large proportion of the resources available (Universidad de Chile 1998).

The present paper draws the general picture of the labour market of six health occupational groups; three are university-trained professionals (doctors, dentists and pharmacists) and three trained at the technical level (nurses, ancillary nurses and technicians). An analysis of the markets is presented to compare the distinct features that characterize each labour market. Finally, the implications of the results of the study for health personnel policy-making are assessed.

Methodology

One survey for each occupational group was carried out and was representative at both the national and regional level. Since there were no data available from the 1991 Population Census, we constructed our own sample framework. Two databases for every occupational group were originally created, one with the information gathered from schools and the other with information gathered from institutions employing health personnel. For this second database, information generated from other sources was also considered, mainly to try to catch personnel working without any institutional link at all (Ministry of Health/World Bank 1996).

Once each pair of databases was obtained, comparisons were made to identify duplicate and missing cases. All matched cases were transferred to a new database called the sample framework. The remaining cases were reviewed carefully to find any evidence of their existence. All cases showing no evidence were considered either deceased, retired or emigrants, and excluded from the sampling framework.

The selection of cases was made at random in every sample framework. A probability of selection was given in every case, which was the reverse of the number of cases in the framework. Table 1 also shows the number of cases represented by the sample in every group (adjusted universe). At the extreme right of Table 1, a column called alternative estimation is also presented showing figures obtained by the Pan American Health Organization in order to contrast our estimations.

Two types of questionnaire were designed. The first was designed specifically for professional groups and the second for technicians. Four sections were defined in each questionnaire including questions about (1) socio-demographic characteristics, (2) training background, (3) labour conditions, and (4) satisfaction assessment. All questionnaire information was used to construct databases. Data handling and management was done using SPSS.

Policy and legal framework components in the study were also carried out. In the first, several key informants, mainly decision-makers at universities, health care institutions and representatives of the occupational groups, were interviewed following a previously designed guide of questions. In the legal component, official and non-official documents regarding the regulation of all groups were collected.

Results

The main features of the labour markets studied are presented in Tables 2 and 3. Table 2 shows the main socio-economic and training characteristics, which are as follows.

Socio-economic and training characteristics

Availability of personnel per 1000 inhabitants

The largest group of available personnel in Nicaragua is nurses (6.5 nurses per 1000 inhabitants). Almost 50% of them are called professionals in Nicaragua although the majority have not obtained a university degree. The second group is that of doctors, with almost half the number of nurses. This availability has increased significantly in the present decade. Technicians come next, and dentists and pharmacists at the end with similar figures.

Percentage of participation by women

Professional groups tend to have less representation of women. The occupational group showing the lowest percentage of

Table 2. Summary of indicators by occupational category (part 1)

Characteristics	Doctors (%)	Dentists (%)	Pharmacists (%)	Nurses (%)	Technicians (%)
By 10 000 inhabitants	7.9	1.8	2.0	15.2	5.2
Women	40.6	65.1	78.9	95.4	72.9
Graduated in the last 15 years	73.8	73.8	53.9	85.2	83.1
Living in Managua	48.4	65.7	40.5	57.6	40.8
With specialty	52.3	14.8	5.5	–	–

Source: Labour Market of Health Workforce in Nicaragua 1996. Ministry of Health/World Bank/Funsalud.

women is medicine. This profession is highly regarded in Nicaraguan society and still represents the standard of professional success. Male over-representation in medicine is only a sign of this. Nursing is the occupational group with highest representation of women, but not far below is pharmacy with an impressive 79.8%.

Graduated in the last 15 years

Except for pharmacy, in all professional groups the percentage of recently graduated practitioners is above 70%. In the Sandinista period a policy for training increasing numbers of health personnel was strongly influenced by the shortages left after the revolution, by the need to cope with war conditions, and in order to guarantee full coverage of health services to the population according to the aims pursued by the regime in the health arena. A new public medical school was opened and the number of new enrolments expanded.

Living in Managua

Managua contains one-fifth of the country's population but around half of the available health personnel. This concentration pattern is characteristic of developing countries. There are differences among groups but dentists and nurses show higher levels of concentration since urban areas have a higher demand for them than rural areas.

Specialization

By Latin American standards the percentage of specialist doctors in Nicaragua is high (52.3%). This group includes those who have had specialized training at postgraduate level. In Mexico, for example, less than 40% of physicians have specialist training. A large percentage of Nicaraguan doctors have been trained in foreign countries, Mexico and Cuba being the most common, at the level of basic speciality. However, this level of specialization is at odds with the country's health needs, which, as shown above, are still concentrated at the primary care level. The percentages in the other professional groups seem to be more in tune with other countries in the region.

Labour conditions

Table 3 shows the labour conditions, which are as follows.

Unemployment

The survey was not able to assess the entire level of unemployment. Figures in the table only show those who had no job between the moment they were selected for the study and the moment of the interview (between May and August 1996). Technical groups show higher percentages of unemployment, particularly nurses and technicians. According to various sources (Fetsalud 1994), the Ministry of Health had terminated hundreds of workers in the two years prior to the survey. Those with the lowest level of training have suffered the worst.

Women experience more unemployment than men. Among doctors, the rate of women's unemployment is 3.5 times higher than of men.

With single employment

More than 80% of the nurses and technicians reported only one job position. Professional groups tend to have more job

Table 3. Summary of indictors by occupational category (part 2)

Characteristics	Doctors (%)	Dentists (%)	Pharmacists (%)	Nurses (%)	Technicians (%)
Unemployment	1.0	3.6	2.1	6.3	8.2
With single employment	60.2	70.6	70.0	90.5	82.2
Working in the public sector	81.5	56.3	24.2	94.5	90.0
With a salaried position	79.5	65.5	67.2	100	99.4
Working <36 hours/week	13.8	19.1	14.0	9.6	16.6
Earning <US$300/month	18.6	15.8	14.2	52.3	28.6
Dissatisfaction with labour conditions	20.7	17.7	12.3	11.5	10.4
Stressful job	70.4	46.1	42.7	48.3	26.4

Source: Labour Market of Health Workforce in Nicaragua 1996. Ministry of Health/World Bank/Funsalud.

positions than technical groups, which rely mainly on the Ministry of Health for work. Professional groups have more opportunities to work in the private sector, as will be described in the following section.

Working in the public sector

As noted, the great majority of nurses and technicians work for the Ministry of Health. A high percentage of doctors (82%) do the same. In turn, dentists and pharmacists work predominantly in the private sector. Only one in four pharmacists has a position in the Ministry of Health. In recent years market forces have made pharmacists move from public to private employment. The majority of them work as the pharmacist-of-record as is required by law.

With a salaried position

Recent changes in the structure of the labour market have not permitted health personnel to perform as independent workers. As can be seen in Table 2, the vast majority of nurses and technicians are salaried. In all professional groups, between 20–35% declare themselves independent workers. Pharmacists, who are largely in the private sector, are mainly employees and not independent workers.

Working less than 36 hours a week

All groups include a percentage of people who potentially could be working more hours than they do. Together with unemployment, this could be considered a waste of worker-labour capacity that needs to be addressed. The highest percentage is among dentists where one in five works less than 36 hours. High percentages also appear among doctors, nurses and technicians. Considering that they are a young labour force, this percentage should be lower.

Earning less than US$300 a month

Salary stratification among health workers in Nicaragua is clear and the main differences appear between professional and technical workers. In all three professional groups the percentage of people declaring less than US$300 a month is never above 19%. Around 30% of technicians said they were below that level, and 52% of nurses. In Nicaragua in 1996 the exchange rate was just above 8 cordobas per dollar. By 1998, while salaries have remained fixed, the exchange rate had slipped down to 10 cordobas per dollar, reducing still further the income of Nicaraguan health workers.

Dissatisfaction with labour conditions

Professional groups seem to be more dissatisfied with labour conditions than technical groups, despite the latter experiencing worse conditions, including unemployment, as detailed in previous sections. Differing expectations on labour conditions between groups seem to underlie this response.

Stressful job

One more factor regarding the subjective evaluation of working conditions is the level of stress experienced by every group. By far the highest percentage expressing stress is among doctors, an issue that could be linked with the interaction with patients and the responsibility they have to decide about patients' lives. Nurses also have a constant link with patients but do not express such levels of stress. Labour conditions also influence this evaluation, particularly low salaries.

Discussion

Broad political and economic factors have had a strong influence in the redefinition of the Nicaraguan health system. Decentralization of the Ministry of Health structure has been the major policy to expand coverage in the country. Social security is also in a process of change aiming to set up a public–private mix scheme. The private sector is expected to expand based on the existence of a group of the population that is covered by the social security fund or that can pay out-of-pocket. However, a policy to induce the adjustment of the labour force to the structural changes that the health system is experiencing is still absent.

Changes in the labour market of health personnel have been fragmented and following category-specific paths. It seems today that the difficulties that training and employment institutions face to obtain common agreements have had a major impact on this phenomenon. Although the Ministry of Health is the main provider of health services in the country, its capacity to recruit, train and employ health personnel has been severely diminished. The Ministry of Health is also showing a low capacity to establish and enforce health personnel planning. In turn, public universities have not been able to update the contents of their educational programmes, while, in the case of physicians, a new private university started to train doctors under philosophically and technically market-oriented education.

Moving in a brief time span from State to market in the context of human health resources in Nicaragua has not been an easy task. On the supply side, State schools were the only ones entitled to educate health personnel according to the policies defined by the government during the 1980s. Since 1990, an interest in the foundation of private schools has been present. So far, only one medical school has been founded in the health field. This school has as its main strategy the importation of educational programmes that have been working for some years in similar contexts within the region. Its aim is to educate high quality doctors through the application of a tough selection process, to maintain a reduced number of new enrolments, and to recruit the best teachers available in the country.

On the demand side, at the end of the 1980s the main provider of health services was the Ministry of Health, although private services were not forbidden. At the present time the private sector is offering broadening job opportunities to health personnel. In general, although job stability is not better than in public institutions, private institutions offer higher salaries, more training opportunities and they are committed to culturally build an image of prestige that indirectly benefits the personnel. In the public sector, pay is the most

evident problem. Nonetheless, within this framework only doctors have been able to negotiate advantageous conditions in terms of schedules and responsibilities, while pharmacists have been pushed to look for opportunities in the private sector, and technicians to unemployment.

Thus schools are confronting today the problem of how to modify the training of new generations in order to facilitate their incorporation into the labour market, while health institutions are competing under unequal bases for the recruitment of these new graduates.

Various specific problems in the market can be mentioned, one being the imbalances in the number of personnel among categories. For example, in countries such as Honduras or Guatemala there are three doctors per nurse (including both professionals and ancillaries). In Nicaragua, these differences are not present, as for every doctor there are two nurses (for all categories). However, the availability of doctors between 1992 and 1997 doubled (from 4.36 to 8.56 per 10 000 inhabitants) while nurses increased only 60%. It is important to assess the future trends of personnel availability as they have to be in tune with the expected future health needs of the Nicaraguan population.

Within the medical category, the major problem is a distorted balance between generalists and specialists. The number of specialists seems excessive to tackle the health needs of the population. However, despite the decentralization process, the structure of the health system does not offer incentives to doctors to move to areas where needs for health care are more urgent.

For dentists and pharmacists, changes in the health system have meant major changes in their labour market. After decades of being attached to the public sector, in the early 1990s their labour market changed abruptly to a private orientation. Despite this rapid shift, these two markets seem to be the most balanced of all. Since the number of practitioners is low in both groups, unemployment is still low compared to technical groups and the private market has been able to catch those moving away from the Ministry of Health. Dentists are producing health-related services while pharmacists found a comfortable niche as employees of pharmacies.

All technicians are highly dependent on the Ministry of Health. The job cuts, which, according to the National Federation of Health Workers, were made by the Ministry of Health between 1994 and 1997, have affected them most. Their unemployment level is the highest of all categories and their salary level is the lowest. Their capacity to work in the private sector has been, so far, very low. As the private and social security sectors are oriented mainly to curing, all health technicians will find it very difficult to obtain work in any of these sectors. Nurses may be able to find opportunities related to the type of work they undertake.

A problem that affects all categories, and that is a major cause of dissatisfaction, is low salaries. Although there is stratification between professional groups and technicians, favouring the former, they do not consider their salaries to be satisfactory. However, according to PAHO figures in countries such as Costa Rica and Panama, medical salaries do not go beyond 4.7 times what is considered the minimum salary in the country. Our estimation is that on average Nicaraguan doctors earn 8.3 times the country's minimum salary. There is no special payment, as in the past, for personnel who move to rural areas and hardship posts. It is also noteworthy that private practice is more lucrative for doctors than public practice. The average income for those doctors who are dedicated full-time to the first is 6024 cordobas a month compared with 3778 for public full-time doctors.

One important issue to be considered finally is the proportion of women represented in all categories of health manpower. They represent 70% of all technical and professional personnel. In all categories, except doctors, they are the majority. In Nicaragua there is no special policy regarding the participation of women in health care, in spite of the fact that women have strong participation in the decision-making process at the Ministry of Health. As other studies have demonstrated (Hugman 1991; Doyal 1994), putting women's needs at the forefront of the planning and policy process is a controversial issue even in developed countries.

The role of the State under the new environment

Most of the health sector reform processes carried out in the 1990s in Latin America have introduced market changes. Parallel to the introduction of markets, the role of the State has been redefined, giving it a subsidiary role in the financing and production of health services and aiming to strengthen its capacity as a regulating agent (Frenk 1995). Health reform in Nicaragua has been changing the role of public and private sectors within the health system. Under this environment the Ministry of Health has been withdrawing from the production and financing of services, and hence as employer of personnel, to acquire a role of systemic regulator. This trend is expected to continue in the future, although its expansion may be curtailed by the high percentage of Nicaraguans not involved in the formal economy and not paying taxes or social security fees. This scenario should be taken into account regarding the capacity of the State to formulate and carry out policy as the main actor in the field of human resources for health. Today the health sector is in dire need of a framework for participation and negotiation, as was experienced in the 1998 doctors' strike which lasted an excessive amount of time, halting the production of services and therefore affecting the population.

The following are the main policy options that seem to be available to the Ministry of Health in the field of human resources:

(1) The definition of standards of education for all categories, which should be followed by both public and private schools.
(2) The definition of minimum standards for the production of health services, particularly related to quality.
(3) The relaxation of fee schedules applied from the central authority to the decentralized services in order to enable the latter to improve their conditions to recruit personnel.
(4) The subsidization of local authorities identified as

particularly financially weak and/or in need of specific types of personnel in order to avoid inequities.

(5) The call for participation of all actors involved in the field of training and employment of health personnel, particularly those not considered up to date (i.e. professional associations).

(6) To ensure that all sectors within the system (social security, private services and Ministry of Health services) perform under explicit regulations regarding the supply and demand of health personnel.

Market forces are gaining momentum as important means to allocate and utilize health personnel in Nicaragua. The capacity of the State to define and enforce a minimum regulation in the health personnel labour market will be crucial to ensure the realization of goals under the reformed system. New conditions demand more participation of social actors in an environment in which the mix of public and private sectors seems to be the most probable scenario for the future.

Endnotes

[1] Please refer to the methodology section to see the way universes by personnel category were estimated.

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Biographies

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