

Nursing in Croatia: Past, Present, and Future

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In the health care system of the Republic of Croatia, there are 30 000 nurses. More than 7000 of them have college or university professional qualifications. Nursing education consists of secondary-level vocational education followed by two cycles of university-level education – baccalaureate and diploma cycle. A PhD cycle, which would allow the development of scientific career for nurses, does not exist. The secondary-level vocational school qualifications are not recognized by the European Union educational system, requiring a necessary reform in that field. The education of nurses should be attuned with the needs of health care institutions, and nursing care should be based on modern categorization of patients, standards of nursing practice, and clearly defined responsibilities. However, the Croatian Ministry of Health has not yet defined the necessary number of nurses in Croatia or their required educational level. Licensing registered nurses is another great problem that the health care system is facing, because Croatian nurses with only secondary vocational qualifications do not meet the requirements for licensing. The current legislation on nursing is still only formal and not implemented on a wide scale in the health care system. Considering the new trends, nurses in Croatia should work on developing a new systematization of workplaces and more accurate assessment of the job complexity index and nursing salary.

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> **Received:** March 19, 2008

> **Accepted:** June 5, 2008

> **Croat Med J. 2008;49:298-306**

> doi: 10.3325/cmj.2008.3.298

Development of the nursing education in Croatia at the beginning of the 20th century

The beginning of nursing education in Croatia can be traced back to the early 20th century, although the first organized care for the patients started in 1845, when six nurses arrived from Austria to Zagreb (1). The first nurses set up the foundations for two activities – educational work in schools and care for patients in hospitals and nursing homes. They were

also responsible for children's education and care in kindergartens, playgrounds, and orphanages, as well as in various academies for youth education. Nurses started their educational work in hospitals in 1846, when a small women's hospital with 12 beds was opened (1).

The beginning of the 20th century was a period characterized by various epidemics, especially tuberculosis, which created the need for professionally educated nurses. They were recognized as good health care teachers and important team members for clinical nursing care. This further created a need for vocational education of nurses and founding of nursing schools.

The first nursing school was founded in Zagreb in 1921. The first students were 8 lay women and 30 nuns from the orders of St Vincent and St Cross (1). The school was founded with an aim to train students in tuberculosis prevention. Yet, since many students of the first generation showed interest in hospital work, school introduced a hospital specialization course (2). The education of the first generation of nurses lasted a year, the education of the second generation of 1922 a year and a half (1922), and the education of the third generation of 1923 two years (2). After finishing the training and passing the state exams students received a diploma of a social-medical or hospital nurse-assistants (2). In 1923, according to the resolution of the Ministry of Healthcare, the school was officially named the State School for Nurse-assistants. In 1927, the School of Public Health was founded and merged with the State School for Nurse-assistants. The first two graduate nurses went to Vienna and London to study organization of nursing service. Afterwards, they worked in the Hospital for Infectious Diseases in Zagreb (2). This was the only hospital in Croatia before 1945 that employed graduated nurses (2).

The law on vocational schools for ancillary staff in social and health care services came into effect in 1930. This was a significant year for the development of professional nursing in Croatia (2). The law excluded non-professionals from the nursing practice and limited the education for nurses to three years, including nursing internship. Only students who had four years of community secondary school could apply. The teachers in nursing schools were not only required to have a degree in nursing, but they also had to have passed the final exam in a secondary school or teachers school, as well as a pedagogy test, and to have at least six months of working experience in primary or secondary health care. The school introduced a continuing evaluation of knowledge, which was performed by teaching nurses. This model of education was in use until 1945.

Development of the nursing education in Croatia from 1945 to 1959

Until 1947, the Republic of Croatia had only one school for nurses, located in Zagreb. In 1945, the school had 51 female students, but this number increased to 203 in 1946 and 1947 (2). The reason for enrolling such a large number of students was the government resolution that the nuns had to leave civil service in the hospitals (2). These positions now had to be filled by nurses. Therefore, at the beginning of 1947, schools for nurses opened in Rijeka, Osijek, Split, and Šibenik. In 1948, another school opened in Zagreb. The founder of these schools was the Ministry of Public Health of the People's Republic of Croatia, which also provided financial support for their work. The requirements for enrolment were four years of primary school and a minimum of 17 years of age. The program lasted three years (2). In the 1948/49 school year, the program was extended to four years, students with finished seven-year primary school were accepted, and there

was no minimum age limitation (2). The four-year program was in effect until 1952 (2). In the 1952/53 school year, the school started enrolling students with six years of secondary school and their education lasted three years. Beside vocational subjects, the teaching plan also included history, Latin, and geography. Students had to take their final exam before a committee of eight members, including a representative of the Ministry of Healthcare (2). Older students with longer primary education facilitated the education process.

Due to efforts of Dr Andrija Štampar, the principal of the School of Public Health and the dean of the University of Zagreb, School of Medicine, the education of nurses changed its concept. It became clear that nurses were not only physician assistants and physician subordinates, but had a specific and equally important role within the health care system. From 1950 to 1953, the School of Public Health in Zagreb organized a postgraduate education and training program for nurses, which lasted three semesters. Upon completion of the program, students received the Public Healthcare Nursing diploma (2). The aim of the program was to enhance nurse competence in the areas of general and specific patient care, dietetics, and prevention of diseases, and to qualify them for work in public health care and teaching (2).

In 1953, the School for Nurses in Zagreb merged with the University of Zagreb School of Medicine and continued its work as the Academy for Nurses (2). The legislation on higher education for nurses, accepted by the Croatian House of Representatives, gave mandate to the University of Zagreb, School of Medicine to establish new schools for nurses (3). The education now prepared nurses for all jobs related directly or indirectly to health issues. After graduation they were expected to be able to assume responsibilities in their field of work, and understand all factors that influ-

ence people's health. Lesson and practicals in nursing were included in the third year of the medical studies future physicians to the nursing work adequate assistance to nurses (3). Beside that, at the end of the third year, medical students were required to spend one month in rural regions to get acquainted with socioeconomic and health conditions in these areas. They were organized in teams with at least one or two female nursing students. The teams worked together, learning about the importance of cooperation between different occupations (3). The enrolment requirements for the Academy of Nurses were physicians and nurses 18 and 25, good health, secondary school diploma (secondary school providing general or classical education or preparatory course for teachers), and passed the admission exam (3). Priority was given to candidates with better scholastic achievements, those who had already worked in a medical institution, and those who showed a special inclination toward working with patients (2). Female students spent their entire education in boarding schools, because life in a collective was considered important for developing social skills and emotional stability, which were the characteristics required for the nurse's calling. In boarding school, students acquired the hygienic habits, discipline, and respect for order (2). A boarding school was headed by the Principal, who had to be a graduated female nurse. Specialized teachers were also graduated nurses (2). The teachers were required not only to have a nursing diploma, but also to have completed additional postgraduate studies or distinguished themselves in nursing work after graduation (2). After the Academy for Nurses in Zagreb, four more academies were founded – in Osijek, Split, Pula, and Rijeka (2). As opposed to medicine, which developed on the basis of research, there was no research in the field of nursing, absence of which was strongly felt in all areas of nursing.

Development of nursing education in Croatia from 1960 to 1984

After the post-war upswing, the 1960s were a “dark period” for the development of nursing in Croatia. There was a lot of misdirected planning and improvisation, and the damaging consequences of such a superficial approach to nursing education are felt even today. The legislation on secondary schools enforced in 1959 effectively terminated the existing legislation on academies. Thus, starting with the 1959/60 school year, the academies once again became secondary schools with a four-year curriculum. The requirements for enrolment were finished primary school and age up to 19 years (2). The school for nurses educated students to perform all tasks concerning patient care and carry out certain assignments in the health care and public health service, and work in counseling centers. Secondary schools for midwives and pediatric nurses were opened in this period, thus creating possibilities for education for adults as well. The main characteristic of this kind of education was practicality and technical orientation toward patient care, especially in inpatient institutions. Such an orientation contributed to the loss of the already well-developed professional autonomy and the loss of interest in research work in nursing (4).

In hospitals and institutions for primary health care, nurses with a higher degree of education were replaced by nurses with the secondary school degree (4). The changes in education brought about changes in the social background of nursing students. In the pre-war and post-war periods (World War II), the nursing students came mostly from wealthy urban families, whereas in the second half of the last century, however, the social structure of students changed (5). Nursing schools were attended mostly by younger students (mainly girls aged from 14 to 15) from rural regions or lower urban class. Practical and technical ori-

entation tarnished the reputation of this profession.

The Academy for Nurses was re-opened in 1966 in a building that belonged to the Institute for Mother and Child Welfare in Zagreb (2). The classes were held in various health care facilities and other organizations. The schooling lasted four semesters and applicants were given a choice between the hospital care course and the primary health care course, which deprived the profession of versatility. A new study program in ophthalmology was introduced in 1968 at the request of the Chair of Ophthalmology at the University of Zagreb School of Medicine. The study program offered three courses as follows: the orthoptic course, the course for the functional examination of vision, and the course for nurses in ophthalmology (for employed students). After the fourth generation finished their studies, the course for nurses in ophthalmology was terminated (2).

Over the years, the interest in the nursing studies increased, especially among already employed nurses. In 1980, two branches of the School were opened in Osijek and Split (2). At the request of the Croatian Nurses Association and according to the decision of the Department of Education from 1979, the option of full-time studies was revoked (2) and only those referred by a health organization to uptake nursing studies, with a special contract and permission for education, had a chance for nursing education (2).

The period from 1975 to 1990 was marked by great changes in the entire educational system (6). Students of nursing schools received broader general education, which allowed them to choose between different university schools, but their vocational education was relatively poor. This teaching curriculum was modified and implemented in the 1984/85 school year (7). In 1984, the Academy for Nurses merged with the University of Zagreb

School of Medicine into a single scientific-teaching institution. Nursing studies were organized through several programs as follows: clinical care, primary health care, gynecology obstetric care, ophthalmologic care, and dietetic course (2).

Development of nursing education in Croatia from 1985 to 2005

A unified program of education was introduced in 1986, focusing on professional nursing in accordance with the development of nursing education in the world (8). The education lasted two years and the requirements for enrolment were secondary school diploma and passing of the admission (2). There was once again an opportunity for full-time studies not related to the employment.

In 1999, there was a new reform of higher education for nurses. The education was extended to three years, the curriculum was enriched with new subjects in the field of health care, and the percentage of vocational content amounted to over 60% (2). Secondary school education has not changed and still lasted four years. Practical classes amounted to only one-fifth of the total curriculum, while only half of the theoretical classes were professionally oriented. This spoke to the poor vocational training and problems that affected, not only patients and nursing profession, but also the entire health care system. In the 2005/06 school year, a core curriculum was created for all Academies for Nurses in Croatia (9). The curriculum was harmonized with the directives and recommendations of the EU (Sector directives 77/452/EEC, 77/453/EEC, 89/595/EEC, 2005/36/EC – nurses), World Health Organization (WHO; Alma Ata Declaration, 1978; World Health Assembly Resolution; WHA 42,27-1989; WHA 45,5, 1992; WHA 49,1 – 1996; Health 21: Copenhagen, 1998),

and the Bologna Declaration, the implementation of which started in the 2005/06 school year (8,10).

With the Bologna Declaration, nursing finally entered the system of higher education and baccalaureate and diploma degree in nursing were introduced (9). However, nurses in Croatia are still deprived of the possibility to do research in the area of health care because of the dual track education system in Croatia, which is divided into university and polytechnic sectors (the nurses' education is within the polytechnic sector). The only option for their further education is provided by the opening of the two-year vocational specialist studies. There are specialist studies in organization and management in nursing and public health (11).

Nursing graduates cannot obtain the degree of Master of Science or specialist in their respective fields, but only the title of graduate nurse (12). On the other hand, graduates who finish other polytechnic schools, for example, economy, obtain the title of "specialist."

The program of the secondary nursing school is not compatible with the programs in the EU and the qualification of that school is not recognized in EU member countries.

In Croatia, only the curriculum of three-year vocational and specialist studies is compatible with the Sector directives of the EU. At the moment, only about 6% of nurses meet these requirements.

Today, the health care system in the Republic of Croatia includes 22 486 nurses with secondary vocational school qualifications, 5201 nurses with higher degree qualifications, 1861 with high professional qualifications (baccalaureate), and only 35 nurses with a diploma degree in a specialized study (Table 1).

It is obvious that, after Croatia joins the EU, the diploma of nurses with secondary-level vocational qualifications will not be rec-

Table 1. Number of nurses with diploma in nursing in Croatia (study finished after secondary vocational school)*

Educational institutions	Academy for nurses – until 1999 (first degree in nursing)	Polytechnic (baccalaureate in nursing, 3-y study –180 ECTS points)†	Polytechnic (postgraduate study – diploma degree; specialization in nursing, 2 y – 120 ECTS points)	Total
Department for Nursing Education, University of Applied Health Studies, Zagreb	4151	1113	35	5299
Department for Nursing Education, University of Osijek, School of Medicine	–	48	–	48
Department for Nursing Education, University of Rijeka, School of Medicine	1050	331	–	1381
Department for Nursing Education, University of Split, School of Medicine	–	235	–	235
Associate-degree college in Split	–	134	–	134
Total	5201	1861	35	7097

*Data collected from administrative unit of Medical School – Department for Nursing Education, from University of Split, Rijeka, Osijek and Applied Health Studies-Department for Nursing Education University of Zagreb, April, 2008.
 †ECTS – European Credit Transfer System.

ognized in the EU because Croatian educational system is not harmonized with the EU requirements. Moreover, nurses will not be able to work in the EU member countries. The education of nurses in Croatia starts after the completion of an 8 years of elementary school, ie, at the age of 14, while the EU requires that the education of nurses begins at the minimum of 17 years of age. In Croatian secondary nursing schools, the ratio between theory and practice is 3:1, while the EU standards require that theoretical lessons make up at least one-third of classes (around 1550 hours), and the practical lessons one half (2300 hours) (Table 2). The recommendation of the WHO and EU is that regular education with strictly professional theoretical and practical lessons lasts a minimum of 3 years.

Today there are only 5 higher education institutions/polytechnic schools with organized studies for nurses and 23 secondary vocational schools for nurses, without a tendency for decreasing their number (Figure 1).

Table 2. Secondary vocational school for nurses – relation between the number of theoretical and practical lessons

Subjects	Exercises/		
	Theory	Practice	Relation
Basic	1925	315*	84:16
Vocational	1407	632	53:47
Practical work in a hospital department		210	
Total	3332	1157	66:34
Total practice in nursing care	3332	842	75:25

*Exercises of the first year relate to gym class and computing (315 h)



Figure 1. Distribution of secondary vocation schools for nurses and studies for nurses across Croatian counties. Squares – secondary vocation schools for nurses; rhombs – studies for nurses.

Regulations and legislation on nursing in Croatia

At the initiative of Croatian Nurses Association and Ministry of Health, the Croatian Nursing Council was founded in 2003 as a completely autonomous body in charge of regulation and legislation nursing (13). From the inception of nursing, there had not been any legislation or decree that regulated the work of nurses and their rights and obligations. The past health care legislation did not even mention nurses except as one of the profiles of health care workers. In the public

eye, nurses are physician assistants who must strictly carry out the orders given. The Nursing Act, adopted by Croatian Parliament in 2003, defined for the first time the activities of nurses, the standards of education, the requirements for performing nursing, the duties of nurses, and quality assessment of the nursing (13).

In 2003, the Croatian Nursing Council created a rulebook on licensing registered nurses (14). After completing nursing internship under the supervision of a mentor, a nurse is issued a license by the Croatian Nursing Council, ie, approval to practice as an independent nurse (15). The problem is that the requirements for passing the professional exam do not differ from the professional preparation of nurses. The contents of the exams are the same and both are taken before to the same commission members. This calls again for the licensing of nurses with secondary school qualifications, because the requirements they fulfill do not comply with the EU standards (Table 3).

More than 99% of the nurses got the approval to practice independently. The licence is valid for 6 years and can be extended if the

nurse collects enough points through continuous professional education (a nurse has to collect 15 points every year through courses, conferences, or symposiums; a total of 90 points). Continuous professional training is organized by the Council and health care institutions, and the supervision and evaluation are done by the Council.

Employment of nurses in Croatia

Nurses in Croatia work in all health care institutions, while a somewhat smaller number works in the institutions for health and social services (Table 4). There are still nurses with primary school qualifications who work at posts intended for nurses with higher qualifications and vice versa. There are no standards for the nursing practice, clearly defined competences, or systematic compiling of nursing documentation. In this situation, it is difficult to talk about a quality management of health care system. According to the registry of the Council, there are 850 unemployed nurses, while 623 work outside the area of health care. It is possible that there is still a small number of nurses who have not been registered with the Council.

Table 3. Number of licensed nurses in the counties of the Republic of Croatia*

Administrative units (county)	No. of nurses
Bjelovar-Bilogora	664
Slavonski Brod-Posavina	1078
Dubrovnik-Neretva	720
City of Zagreb	8530
Istra	1196
Karlovac	902
Koprivnica-Križevci	602
Krapina-Zagorje	922
Lika-Senj	182
Međimurje	592
Osijek-Baranja	2231
Požega-Slavonija	629
Primorje-Gorski kotar	2416
Sisak-Moslavina	1035
Split-Dalmacija	2637
Šibenik-Knin	653
Varaždin	1279
Virovitica-Podravina	513
Vukovar-Srijem	1013
Zadar	1024
Zagreb	765
Total	29 583

*According to the register of the Croatian Nurses Chamber, April, 2008.

Nursing salary

Nursing salary is based on the Collective contract for the area of health care and health care insurance (16) and the job complexity index of health care workers.

Table 4. Distribution of nurses according to healthcare institutions in Croatia

Institution	No. of nurses
Primary health care	7242
Hospitals and clinics	17 421
Nurses care institution	1657
Polyclinics	480
Institutes	250
Social health care institutions	868
Educational institutions	192
Unemployed nurses	850
Nurses working outside of nursing	623
Total	29 583

Table 5. Job complexity index, as a basis for calculating salaries of health care workers

Health care workers	Category station	Job complexity index
Head of the University Hospital Center Zagreb or clinical hospitals	1st	3.50
Deputy head of University Hospital Center or deputy heads of clinical hospitals		3.20
Assistant of the head of University Hospital Center or clinical hospitals		3.10
Superintendent of a clinic		3.10
Chief nurse in a state institution	1st	1.35
Chief nurse in a clinic		1.28
Health care worker with high professional qualification: specialist or general practitioner in a hospital	1st	2.35
Health care worker with high professional qualification; specialist		2.00
Health care worker with high professional qualification		1.61
Health care worker working in intensive care, hospital infection control, patronage; engineer of medical radiology	2nd	1.18
Health care worker (nurses, health care technician)		1.07
Health care worker working with open sources of radiation, cytostatics, in AIDS treatment units, in intensive care units, instrumentation, hemodialysis, obstetrics, emergency department, anesthesiology	3rd	1.10
Nurse in a polyclinic service, diagnostics; health care technician		0.92
A highly qualified driver in the Croatian emergency health care service		0.95

On average, nurses have three times lower salary than physicians (Table 5). According to job title and position, where the difference in physician salary ranges from 1.61 to 2.35, the difference in nurse salary ranges from 0.92 to 1.2. Although the health care system has more than 1800 nurses with high professional qualifications and around 35 nurses with finished 5-year program of graduate nursing studies, there are no work places for nurses with high professional qualifications. Consequently, the job complexity indices are not synchronized.

Future of nursing in Croatia

In order to be acknowledged as a profession, regardless of the existing legal framework, nursing should meet several quality conditions as follows: to have developed theories and models, developed education system at all levels (according to EU directives and WHO recommendations), professional expertise, defined number of nurses in the health care system, and developed professional ethics.

At present, nursing in Croatia has several unresolved problems as follows:

1) More than two-thirds of nurses have secondary vocational education, which is not recognized by the EU system of professional qualifications. Therefore, it is necessary to re-

form secondary vocational education and enable further education for the nurses who already work.

2) Nursing education should not be performed only through the baccalaureate and diploma cycles, but also through the PhD cycle, to allow the development of scientific career for nurses.

3) In order to have high quality, well-planned, and well-organized nursing education, the Croatian Ministry of Health should define the current needs (the number of nurses, their professional qualifications, and educational level).

4) Clear criteria are necessary for determining the number of nurses needed in health institutions (according to the number of beds, number of physicians, and the need for nursing care for specific types of patients).

5) Although nursing education has been harmonized with the Bologna process at the baccalaureate and diploma level, job complexity indices still refer only to secondary-level vocational nurses and college degree nurses.

Conclusion

Nursing in Croatia is facing great changes. It will be necessary to perform a radical reform of secondary school system and harmonization of the entire health care system with the health care needs. Nurses should have the op-

portunity to do research, earn a PhD degree, and develop their scientific careers.

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