Specialty training system in Poland in 2011-2018 according to the Centre of Postgraduate Medical Education register data

System kształcenia specjalizacyjnego w Polsce w latach 2011-2018 według danych rejestru prowadzonego przez Centrum Medyczne Kształcenia Podyplomowego

Wojciech Stefan Zgliczyński[1], Zbigniew Węgrzyn[2], Mariusz Ruiz[3], Andrzej Żochowski[4], Mateusz Jankowski[1], Bartosz Kobuszewski[3], Janusz Sytnik-Czetwertyński[3], Adam Skowron[5], Jarosław Pinkas[1]*

[1] *Department of Health Care Organization and Medical Certification, School of Public Health, Centre of Postgraduate Medical Education, Warsaw, Poland*

[2] *Office of Training Programs and Accreditation, Centre of Postgraduate Medical Education, Warsaw, Poland*

[3] *Department of Economics, Law and Management, School of Public Health, Centre of Postgraduate Medical Education,Warsaw, Poland*

[4] *Analysis Team, Centre of Postgraduate Medical Education, Warsaw, Poland*

[5] *Institute of Philosophy, Kazimierz Wielki University in Bydgoszcz, Bydgoszcz, Poland*

KEYWORDS:

- post-graduate education
- physicians
- Poland

ABSTRACT:

Introduction: The specialty training system in Poland is subject to constant changes on the formal and legal as well as qualitative and quantitative levels. These changes should be analysed on an ongoing basis to assess the directions of development of education for medical specialists.

Objective of the paper: The study aimed to determine the quantitative changes taking place in the system of specialty training of physicians in general and in ten most numerous fields of medicine in the years 2011-2018.

Material and methods: Data from the register of physicians undergoing specialty training conducted by the Centre of Postgraduate Medical Education from 2011 to 2018 constituted the material for analysis. The analysis of the material was of quantitative character. The data analysis was performed using the Statistica 12 Software (TIBCO Software Inc., Palo Alto, CA, the USA).

Results: The analysis of data from the register of physicians undergoing specialty training indicates that the number of physicians who trained to be specialists and the percentage of women in the group increased in the years 2011-2018. In the period in question, the percentage of doctors in training within a residency, the number of specialty training providers the number of training places and the use of training places enabling them to pursue specialisation rose as well. The situation differed between 10 specialties analysed.

Conclusions: The system of post-graduate education of physicians in Poland in the years 2011-2018 constantly developed and increasingly took advantage of most of its opportunities.

SŁOWA KLUCZOWE:

- kształcenie podyplomowe
- lekarze
- Polska

STRESZCZENIE

Wprowadzenie: System kształcenia specjalizacyjnego w Polsce podlega ciągłym zmianom. Zarówno na poziomie formalno-prawnym, jak również na poziomie jakościowym i ilościowym. Zmiany te powinny być na bieżąco analizowane w celu oceny kierunków rozwoju kształcenia specjalizacyjnego.

Cel pracy: Celem pracy było określenie ilościowych zmian zachodzących w systemie kształcenia specjalizacyjnego lekarzy ogółem i w dziesięciu najbardziej licznych dziedzinach medycyny w latach 2011-2018.

*Address for correspondence: *Wojciech. S. Zgliczyński, Department of Health Care Organization and Medical Certification, School of Public Health, Centre of Postgraduate Medical Education, Kleczewska 61/63; 01-826 Warsaw, Poland; e-mail: wojciech.zgliczynski2@cmkp.edu.pl*

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Materiał i metody: Materiał do analiz stanowiły dane rejestru lekarzy odbywających kształcenie specjalizacyjne prowadzonego przez Centrum Medyczne Kształcenia Podyplomowego od 2011 r. do 2018 r. Analiza materiału miała charakter ilościowy. Analizę danych przeprowadzono przy zastosowaniu programu Statistica 12 Software (TIBCO Software Inc., Palo Alto, CA, USA).

Wyniki: Przeprowadzona analiza danych rejestru lekarzy odbywających specjalizację wskazuje, że w latach 2011-2018: wzrosła liczba lekarzy odbywających kształcenie specjalizacyjne, wzrastał odsetek kobiet w grupie lekarzy odbywających specjalizację. W analizowanym okresie czasu odsetek osób odbywających specjalizację w ramach rezydentury uległ zwiększeniu, wzrosła liczba podmiotów prowadzących specjalizacje oraz wrosła liczba miejsc szkoleniowych, oraz zwiększyło się wykorzystanie miejsc szkoleniowych umożliwiających odbywanie specjalizacji. Sytuacja różniła się pomiędzy 10 analizowanymi specjalizacjami.

Wnioski: System kształcenia podyplomowego lekarzy w Polsce w latach 2011-2018 stale się rozwijał i w coraz większym stopniu wykorzystywał swoje możliwości.

Introduction

Physicians in Poland are obliged to continuously complement and enhance their knowledge and professional skills (1). Moreover, a doctor in Poland has the right and obligation to fulfil continuing professional development, primarily through various forms of post-graduate education (2). Specialty training is the most common way of improving professional competences among physicians in Poland. The Polish system of specialty training is strongly regulated. Currently, doctors may pursue a specialisation in 77 fields and dentists in 9 domains (3). The total minimum duration of specialty training ranges from 4 to 6 years in case of medical specialization and 3-6 years for dental specialties (3). The education system for medical specialists is subject to constant changes both at the formal and legal levels, as well as at the qualitative and quantitative ones. The changes are mainly due to the continuous development of the specialty organisation and result from the advances in medical sciences.

Nowadays, the condition for beginning specialty training is to complete six year medical studies, 13 – month post-graduate internship, and obtain a positive result of qualification proceedings where the result of the Medical Final Examination plays a decisive role (3). A physician undergoing specialisation performs the full range of duties appropriate for a specialist doctor in a given field. Besides, they can practise medicine freely outside the place of specialty training (2). Completion of the entire specialisation programme is a necessary condition for taking the State Specialization Examination. Passing this examination is equivalent to obtaining the title of a specialist doctor in a specific field of medicine.

A doctor in Poland may undergo specialty training within a residency or a non-residency mode (3). A resident doctor performs work in a specific field of medicine under an employment contract concluded with a hospital or department conducting training for medical specialists. The number of resident physicians enrolled in specialisation programmes in a given domain depends on the number of training residency places granted by the Ministry of Health. The number of granted training residency places is announced by the Minister of Health twice a year based on the analysis of staffing needs from the suggestions of national consultants in individual medicine domains (4). A resident doctor receives remuneration from public funds (5, 6). Apart from residency, specialty training may be carried out under the non-residency employment in the form of a contract with a training hospital, which finances it from its own resources. Supervision over each physician undergoing specialisation is exercised by a specialty training tutor, who is a specialist doctor in the given domain. Public funds finance all specialty training courses and specialty practical internships required by the specialty training curriculum. It does not include, for example, commuting to and from courses and internships, or accommodation during this period. Doctors bear the costs mentioned above at their own expense (5).

Only hospitals and departments that fulfil specific conditions and have been accredited can conduct specialty training. Inclusion in the list of bodies authorised to provide specialty training in a given field is confirmed with accreditation (2).

Objective of the paper

The study aimed to determine the quantitative changes occurring in the system of specialty training of physicians in general and concerning the ten most numerous fields of medicine in the years 2011-2018. The analysis will be used to assess the directions of development of medical specialty training in Poland in the last eight years.

Material and methods

The data from the register of physicians undergoing specialty training conducted by the Centre of Postgraduate Medical Education (in Polish Centrum Medyczne Kształcenia Podyplomowego, CMKP) from 2011 to 2018 was the material for analysis. The data accessibility dictated the choice of the analysis period. Data from previous years are incomplete and were collected in a different standard. Due to the lack of data availability, no comparison with the pre-2011 situation is possible. The analysis covers ten most numerous medical fields in which doctors received specialty training in 2018. These domains include internal medicine, paediatrics, family medicine, anaesthesiology and intensive care, cardiology, radiology and diagnostic imaging, obstetrics and gynaecology, orthopaedic surgery and traumatology, general surgery, and psychiatry.

The analysis concerned the data on the number of: physicians working on completing specialisation in individual domains, including the number of women and men, doctors undergoing specialisation within residency, training places and entities providing specialty training programmes, as well as the age of doctors.

The register data were quantitatively analysed using the Statistica 12 Software (TIBCO Software Inc., Palo Alto, CA, the USA).

Results

Physicians enrolled in specialisation programmes

In 2018, 26272 physicians in total underwent specialty training (Table 1). It grew by 14.9% in comparison to 2011. The highest number of persons was recorded in the following fields: cardiology (1475, i.e. 5.6%), radiology and diagnostic imaging (1224, i.e. 4.7%), obstetrics and gynaecology (1221, i.e. 4.6%), orthopaedic surgery and traumatology (1113, i.e. 4.2%), general surgery (1070, i.e. 4.1%) and psychiatry (1010, i.e. 3.8%). Among ten analysed specialisations in 2011-2018, the highest increase in the number of specialised physicians was observed in psychiatry (37.4%), paediatrics (36.4%) and radiology and diagnostic imaging (31.6%). A slight decrease in the number of specialised physicians was noted in two areas, i.e. internal medicine (-1.7%) and cardiology (-6.0%).

The average age of a physician under specialisation in 2018 was 32.9 years. Compared to 2011, the average age slightly declined (Table 1). Among the analysed fields, the lowest average age of physicians was observed in paediatrics – 30.4 years and in internal medicine – 30.5 years. On the other hand, the highest average age of physicians was noted in cardiology 32.7 years and family medicine 33.5 years (Table 2).

Practitioners enrolled in specialisation programmes in 2018 in Poland are mostly women (63%). In the years 2011-2018, the percentage of female doctors undergoing specialty training showed an upward trend (+2.6 pp from 2011). In the ten specialisations in question, the highest percentage of women in 2018 was in paediatrics (89.9%), obstetrics and gynaecology (69.4%), family medicine (68.6%), and psychiatry (63.5%). In turn, the lowest percentage of women was found in the so-called surgical specialties, i.e. orthopaedic surgery and traumatology (12.8%) and general surgery (37.7%), in which men dominated in numbers (Table 2). In the period from 2011 to 2018, the percentage of women increased in six out of ten analysed fields (general surgery (11.9 pp), obstetrics and gynaecology (8.9 pp), cardiology (5.4 pp), orthopaedic surgery and traumatology (5.1 pp), anaesthesiology and intensive care (1.4 pp), and internal medicine (0.3 pp). While a decrease was noted in 4 other areas: paediatrics (-0.5 pp), psychiatry (-2.2 pp), family medicine (-2.6 pp), and radiology and diagnostic imaging (-3.5 pp).

In 2018, most physicians (71.7%) participated in specialty training within the residency. It was 16.7 percentage points (pp) more than in 2011. Among the ten domains analysed in 2018, the largest share of residents was in paediatrics (94.6%), general surgery (88.4%), anaesthesiology and intensive care (88.3%), internal medicine (88.3%) and obstetrics and gynaecology (86.2%). The lowest percentage of residents was recorded in cardiology (68.5%). In the period 2011-2018, the percentage of physicians undergoing specialty training within residency increased in all ten analysed areas. The highest rise in the percentage of doctors undergoing specialisation as residents was recorded in the following areas: obstetrics and gynaecology (28.8 pp), cardiology (24.6 pp), and psychiatry (18.1 pp).

Training places and entities providing specialty training programmes

In 2018, there were 43660 training places and 6833 entities providing specialty training programmes. In the period 2011-2018, the total number of the abovementioned units increased. In comparison to 2011, in 2018, there was one fifth (20.2%) more training places and one third (33.8%) more entities conducting specialty training. The rise in the number of training places was observed in all analysed areas except for internal diseases (-1.1%). The highest growth in the number of places was recorded in the following areas: paediatrics (+33.9%), psychiatry (+32.8%), and obstetrics and gynaecology (+32.4%). The number of specialty training providers rose in all ten analysed fields, with the highest increases in family medicine (+994.7%), psychiatry (+210.5%), and paediatrics (+30.7%).

In the period under study, the use of specialty training places, as expressed by the indicator of the number of training places to the number of physicians undergoing specialty training remained at a constant level of approx. 1.6.

Among the ten analysed areas of medicine, the highest rate of utilisation of training places in 2018 was identified in radiology and diagnostic imaging (1.1), obstetrics and gynaecology (1.3), and paediatrics (1.3). In turn, the lowest usage of training places was recorded in psychiatry (2.0), family medicine (2.5) and internal medicine (3.0).

Table 1. The CMKP register data for all physicians and medical fields.

	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	22873	23292	23782	23962	23582	24050	24485	26272
including the number of residents	12586	13548	14222	14105	15722	16612	16818	18830
% of residents	55	58.2	59.8	58.9	66.7	69.1	68.7	71.7
including the number of women	13804	14193	14567	14763	14632	15023	15247	16549
% of women	60.4	60.9	61.3	61.6	62	62.5	62.3	63
average age of doctors pursuing specialisation	33.8	33.7	33.5	33.6	32.8	32.7	33.3	32.9
number of training places	36317	37031	37238	38670	39569	43595	42122	43660
number of entities conducting specialty training	5106	5215	5375	5677	6124	6579	6512	6833
number of training places to the number of doctors enrolled in specialisation programmes	1.6	1.6	1.6	1.6	1.7	1.8	1.7	1.7

Source: The CMKP register.

Table 2. The CMKP register data for ten medical domains.

Internal medicine	2011	2012	2013	2014	2015	2016	2017	2018
1	2	3	4	5	6	7	8	9
total number of physicians undergoing specialty training	2720	2637	2604	2603	2350	2351	2399	2675
including the number of residents	2034	2084	2077	1947	1986	2017	2067	2363
% of residents	74.8	79	79.8	74.8	84.5	85.8	86.2	88.3
including the number of women	1894	1863	1856	1850	1679	1679	1693	1870
% of women	69.6	70.6	71.3	71.1	71.4	71.4	70.6	69.9
average age of doctors pursuing specialisation	30.8	30.7	30.35	30.8	30	30.1	30.8	30.5
number of training places	7981	7886	7817	7704	7631	8079	7643	7894
number of training places to the number of doctors enrolled in specialisation programmes	2.9	3	3	3	3.2	3.4	3.2	3
number of entities conducting specialty training	944	930	929	918	919	966	918	950
Anaesthesiology and intensive care	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1412	1407	1409	1395	1377	1414	1400	1455
including the number of residents	1038	1077	1120	1139	1183	1244	1226	1285
% of residents	73.5	76.5	79.5	81.6	85.9	88	87.6	88.3
including the number of women	817	822	824	840	840	841	834	863
% of women	57.9	58.4	58.5	60.2	61	59.5	59.6	59.3
average age of doctors pursuing specialisation	31.7	31.7	31.6	31.3	30.8	30.8	31.5	31.5
number of training places	1840	1877	1902	1911	1931	2021	1961	2018
number of training places to the number of doctors enrolled in specialisation programmes	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4
number of entities conducting specialty training	165	173	176	180	183	192	195	202
Paediatrics	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1554	1628	1747	1782	1793	1864	1883	2120
including the number of residents	1267	1386	1520	1557	1662	1743	1759	2005
% of residents	81.5	85.1	87	87.4	92.7	93.5	93.4	94.6
including the number of women	1405	1477	1576	1602	1616	1677	1691	1905
% of women	90.4	90.7	90.2	89.9	90.1	90	89.8	89.9
average age of doctors pursuing specialisation	30.1	30	301	30.3	29.9	29.9	30.7	30.4
number of training places	1912	1993	2072	2189	2274	2432	2444	2560
number of training places to the number of doctors enrolled in specialisation programmes	1.4	1.3	1.3	1.4	1.4	1.5	1.4	1.3
number of entities conducting specialty training	283	299	308	326	339	356	358	370
Cardiology	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1569	1626	1699	1612	1497	1479	1476	1475
including the number of residents	689	763	819	771	856	943	952	1010

1	2	3	4	5	6	7	8	9
% of residents	43.9	46.9	48.2	47.8	57.2	63.8	64.5	68.5
including the number of women	759	807	859	840	780	777	780	794
% of women	48.4	49.6	50.6	52.1	52.1	52.5	52.8	53.8
average age of doctors pursuing specialisation	34.4	34.5	34.4	34.2	32.9	32.4	33.1	32.7
number of training places	1848	1939	1999	2010	2010	2181	2022	2045
number of training places to the number of doctors enrolled in specialisation programmes	1.2	1.2	1.2	1.2	1.3	1.5	1.4	1.4
number of entities conducting specialty training	166	169	175	177	175	188	174	176
Family medicine	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1540	1523	1459	1400	1290	1332	1362	1625
including the number of residents	933	934	917	839	870	908	937	1220
% of residents	60.6	61.3	62.9	59.9	67.4	68.2	68.8	75.1
including the number of women	1097	1083	1016	955	877	911	929	1115
% of women	71.2	71.1	9.6	68.2	68	68.4	68.2	68.6
average age of doctors pursuing specialisation	37.2	37.2	36.4	36.5	35.3	35.1	35.6	33.5
number of training places	3149	3125	2742	2851	2790	3941	3924	4031
number of training places to the number of doctors enrolled in specialisation programmes	2	2.1	1.9	2	2.2	3	2.9	2.5
number of entities conducting specialty training	57	59	94	158	396	508	555	624
Radiology and diagnostic imaging	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	930	929	970	978	1032	1069	1106	1224
including the number of residents	691	717	743	727	839	876	900	1017
% of residents	74.3	77.2	76.6	74.3	81.3	81.9	81.4	83.1
including the number of women	576	584	613	594	623	652	665	715
% of women	61.9	62.9	63.2	60.7	60.4	61	60.1	58.4
average age of doctors pursuing specialisation	31.7	31.6	31.3	31.3	30.6	30.7	31.3	31.1
number of training places	1054	1113	1149	1204	1258	1397	1335	1381
number of training places to the number of doctors enrolled in specialisation programmes	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.1
number of entities conducting specialty training	166	175	180	184	187	206	197	200
Obstetrics and gynaecology	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1106	1113	1143	1123	1130	1121	1112	1221
including the number of residents	635	703	759	743	860	910	922	1052
% of residents	57.4	63.2	66.4	66.2	76.1	81.2	82.9	86.2
including the number of women	669	699	734	726	756	756	751	847
% of women	60.5	62.8	64.2	64.6	66.9	67.4	67.5	69.4
average age of doctors pursuing specialisation	31.5	31.3	31.1	31.2	30.7	30.7	31.3	30.9

1	2	3	4	5	6	7	8	9
number of training places	1188	1235	1272	1310	1360	1566	1434	1573
number of training places to the number of doctors enrolled in specialisation programmes	1.1	1.1	1.1	1.2	1.2	1.4	1.3	1.3
number of entities conducting specialty training	226	236	236	238	237	263	248	271
Orthopaedic surgery and traumatology	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	1047	1079	1083	1036	1057	1024	1057	1113
including the number of residents	824	894	895	841	943	910	938	994
% of residents	78.7	82.9	82.6	81.2	89.2	88.9	887	89.3
including the number of women	80	99	111	117	120	124	129	142
% of women	7.6	9.2	10.2	11.3	11.4	12.1	12.2	12.8
average age of doctors pursuing specialisation	31.1	31	31	30.8	30.3	30.4	30.1	30.8
number of training places	1376	1407	1462	1503	1561	1600	1601	1666
number of training places to the number of doctors enrolled in specialisation programmes	1.3	1.3	1.3	1.5	1.5	1.6	1.5	1.5
number of entities conducting specialty training	253	259	263	271	276	287	278	289
General surgery	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	935	981	1001	981	990	990	983	1070
including the number of residents	675	744	767	743	832	848	852	946
% of residents	72.2	75.8	75.9	75.7	84	85.7	86.7	88.4
including the number of women	270	305	312	334	347	359	350	420
% of women	25.8	28.3	28.8	32.2	32.8	35.1	33.1	37.7
average age of doctors pursuing specialisation	31.1	30.8	30.8	30.7	30.4	30.5	31.2	31
number of training places	1364	1383	1392	1399	1445	1518	1477	1508
number of training places to the number of doctors enrolled in specialisation programmes	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.4
number of entities conducting specialty training	370	372	376	379	389	410	398	404
Psychiatry	2011	2012	2013	2014	2015	2016	2017	2018
total number of physicians undergoing specialty training	735	756	776	771	796	836	876	1010
including the number of residents	443	513	527	493	576	625	644	792
% of residents	60.3	67.9	67.9	63.9	72.4	74.8	73.5	78.4
including the number of women	483	500	505	495	510	547	569	641
% of women	65.7	66.1	65.1	64.2	64.1	65.4	65	63.5
average age of doctors pursuing specialisation	32.2	32	32	31.5	31.4	31.2	31.8	31.4
number of training places	1517	1573	1617	1700	1736	2179	1932	2015
number of training places to the number of doctors enrolled in specialisation programmes	2.1	2.1	2.1	2.2	2.2	2.6	2.2	2
number of entities conducting specialty training	38	42	51	68	86	104	105	118

Source: The CMKP register.

Discussion

According to the best knowledge of the authors, the examination of the current situation in the field of the medical specialty training system in the light of the CMKP register data is the first such analysis. It concerned only ten out of 77 areas in which doctors can specialize. There is a need for further analyses, which would cover more areas of specialty training.

Medical specialty training differs between countries. These differences relate to, i.e. admission policies, duration, registration and licensing procedures (10). Regardless of this, it is important to describe the situation in particular countries to enable a wider comparison between them. Such comparison is important to gain awareness of existing differences which strengthen transparency and may lead to improve quality of specialty training in medicine.

Physicians enrolled in specialisation programmes

In the years 2011-2018, the number of physicians under specialty training increased significantly (14.9%). The growth in the number of physicians specialising in individual fields was mainly due to the Ministry of Health's decisions on the amount of granted residential places (4). Efforts should be made to ensure that the decisions on the allocation of resident posts correspond as much as possible to the real demand for specialists in individual domains. The financial capacity of the Ministry of Health in this respect is also significant. Expenditures for this purpose are steadily increasing (6).

In 2017, the average age of physicians-in-specialty training was 33.3 years, which was lower than for the whole group of doctors (50.2 years), and for specialist doctors (54.2 years). In 2017, the average age of a person acquiring the first specialisation was 34.6 years, while in the case of the second or subsequent specialisation, these people were 42.0 years old on average (7).

The share of women among physicians undergoing specialty training was 63%. Although it was higher than in the whole population of physicians (57.7%), it was similar to the share of women among physicians (60.9%) who obtained the right to practice their profession in 2017 (7). An increasing share of women among physicians is also noted in other countries (8).

The most common mode of specialty training was the residency contract. In the analysed period, the number of practitioners specialising within residency grew steadily. This direction of changes can be assessed positively, as it ensures a subjectively higher quality of education and meets the doctors' expectations (9).

Training places and entities providing specialty training programmes

The growing number of training providers and the related increasing amount of training places in the analysed period 2011-2018 offers doctors the access to each of the analysed ten specialisation domains and enables all potentially interested physicians to commence a specialisation process in the chosen domain. However, it is the number of places of residency granted by the Ministry of Health in a given field and the number of non-residency ones allowed in training institutions that limits the possibility to begin to specialise. The question arises whether all hospitals and departments which have been accredited to conduct specialty training programmes offer the same high level of education. An alternative to the highly decentralised model of education is the model based on the so-called teaching hospitals, i.e. units which provide future and current health care workers with medical education and training, and which are involved in medical research.

During the period studied, the utilisation of specialty training places expressed by the indicator of the number of training places to the number of physicians undergoing specialty training remained at a constant level, clearly exceeding the number of physicians working on completing specialisation. Such a significant disparity may indicate the need for in-depth analysis to make better use of the system's potential.

Conclusions

Based on the analyses conducted for the years 2011-2018, it should be stated that the system of post-graduate education of physicians in Poland has been continually developing and increasingly making use of its potential. In the examined period:

- the number of physicians undergoing specialty training was growing,
- the percentage of women in the group of specialised doctors rose,
- the percentage of people specialising in residency increased,
- the number of entities conducting specialty training and the number of training places grew,
- the use of training places for specialty training programmes increased.

It must be emphasised that the system of medical specialty training should be analysed on an ongoing basis. The Centre of Postgraduate Medical Education register provides useful data for monitoring the current situation.

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