

# TUBERCULOSIS - FREQUENCY OF HOSPITALIZATION EPISODES IN ROMANIA, 2015-2019

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## INTRODUCTION

Tuberculosis is currently one of the most widespread infectious diseases globally, the WHO estimates that about a quarter of the world's population has contracted the infection, but have not developed the disease and are not contagious. However, any dysfunction of the immune system can trigger the appearance of the disease, those infected having a risk of 5-15% during life to get sick, at risk in this case are people with compromised immune system, malnutrition or smokers. [1] Globally, the incidence of tuberculosis is about 2% per year, between 2015-2019 the cumulative reduction was 9%. In 2019, 10 million people became ill, of which 5.6 million men, 3.2 million women and 1.2 million children, tuberculosis is affecting all age groups and all countries, but 8 countries (India, Indonesia, China, the Philippines, Pakistan, Nigeria, Bangladesh and South Africa) account for two-thirds of all cases worldwide. The most affected regions of the globe are Southeast Asia (44% of new cases), the African Region (25% of new cases) and the Western Pacific Region (18%). [1] In the same year, 1.4 million people died worldwide from the disease, with tuberculosis being one of the top ten causes of death in the world and the leading cause of death from an infectious disease, surpassing HIV/AIDS. [1] Although tuberculosis is a preventable and completely curable condition (approximately 60 million lives were saved through diagnosis and treatment between 2000 and 2019), multidrug-resistant tuberculosis remains a public health problem and a threat to global security, and the number of patients with this form increased in 2019 by 10% compared to 2018 (from 186883 to 206030). [1]

In Europe, although the number of patients fell by almost half in 2015 compared to 2006, in 2015 alone there were 323,000 new cases, 900 cases per day, and the number of deaths in the same year was 32,000. [2] 45% of new cases are registered in young people between 25-44 years old, which negatively affects national economies, due to the loss of income in the most productive age group. [3] The most affected countries are those in the Eastern European region, 18 countries accounting for 85% of the burden of disease and 99% of the disease burden through multidrug-resistant TB. These include Romania, along with the Re-

*Tuberculosis, being one of the top ten causes of death in the world and the leading cause of death from an infectious disease, overcoming HIV/AIDS, is one of the most serious public health problems facing countries in the Southeast Asia region, Africa, but also the Western Pacific Region. Europe is no exception, being affected especially the Eastern European region, here being increased the frequency of cases of multidrug resistant tuberculosis, and Romania is among the group of countries most affected by this scourge, although it has decreased in 2009-2017. The evolution in the last 5 years of hospitalization episodes was a decreasing one, the data analysis indicating a preponderant impairment of men, from professionally active age groups (predominantly people between 40-69 years), the most common location of the infection being the lung or at the airway. Most often the population in poorer areas was more affected (Southwest, South or Northeast region). The average period of hospitalization was a long one (more than a month), and most often it ended with the improvement of patients', the cases of aggravation or death being reduced, death for example being observed especially in case of infection located to nervous system or in the case of military tuberculosis.*

**Keywords:** Tuberculosis, public health problem, hospitalization episodes, Romania

public of Moldova, Bulgaria, the countries of the former USSR (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Russia, Tajikistan, Turkmenistan, Ukraine Uzbekistan). In these countries the number of new cases was 8 times higher than in the rest of the region. [2] Although the incidence of TB in the region is one of the lowest in the world, the burden of multidrug-resistant TB is still the highest, multidrug-resistant TB being one of the key factors in the TB epidemic in Europe, along with HIV, social determinants, risk factors for TB and the limited capacity of health systems. [2]

In the European Union, in 2017, 55,337 cases of TB were reported, with a rate of 10.7 / 100,000 place, of which 39,903 (72%) were newly diagnosed cases, especially in adult age groups. [4]

In Romania, in 2017 the number of cases was 13004, with a rate of 66.2 /100,000 inhabitants, the new cases being 10377 (79.8%). Of these, 85% had pulmonary localization, and the mean age of the patients was 44 years. The evolution of the number of new cases in Romania was a decreasing one from 2009 to 2017, from a rate of 120/100000 inhabitants in 2009 reaching 66.2 / 100000 inhabitants, the decreasing trend being observed in all age groups. And the share of cases of multidrug-resistant TB decreased during this period. [4]

One of the targets for the health goals set by the United Nations through the Sustainable Development Strategy is to eradicate the global tuberculosis epidemic by 2030, and the World Health Organization (WHO) Europe has set targets for 2020 through the TB Action Plan a 35% reduction in TB deaths, a 25% reduction in new cases and a 75% reduction in treatment success in patients with multidrug-resistant TB. Countries are encouraged to meet these goals by providing the population with access to

preventive, diagnostic and treatment health services, and WHO supports countries by establishing norms and standards, ensuring technical cooperation, creating and disseminating scientific medical records. [3]

In order to highlight the aspects related to the hospitalization of tuberculosis cases in Romania, the National School of Public Health, Management and Development in Health, Bucharest (NSPHMPDHB) conducted this study, which aims to identify using data reported in the National DRG system of the current situation, evolving, in the last 5 years of reporting. The statistical knowledge of the evolutionary situation of the cases allows the health system to adopt effective measures for the correct management from a medical point of view, of a public health problem such as tuberculosis which is of interest in magnitude and severity not only for Romania, especially in the context in which our country is among the European countries with the highest incidence.

## OBJECTIV

Identification at national, regional and local level of the geographical distribution of hospitalization episodes caused by tuberculosis, as well as the temporal evolution of their number, between 2015-2019.

## METHODOLOGY

The descriptive, retrospective study performed, used data from the National DRG Database, data reported in continuous hospitalization by Romanian hospitals in a contractual relationship with the National Health Insurance House. In accordance with the provisions of the Order. no. 1782/576/2006 on the registration and statistical reporting of patients receiving medical services in continuous hospitalization and day hospitalization, with subsequent completions and modifications, NSPHMPDHB collects and processes the minimum set of patient-level data for cases treated in continuous and day hospitalization.

In this study, data reported in the period 2015-2019 were used. The analysis of the data regarding the episodes of hospitalization by tuberculosis in Romania, in the previously mentioned hospitals (hospitalizations in continuous hospitalization) was followed. The data were selected using the ICD-10-AM classification, the records were extracted and analyzed from the observation sheets which had as main diagnosis one of the codes: A15.0-Pulmonary tuberculosis, confirmed by microscopic examination of the sputum, with or without cultures, A15.1-Pulmonary tuberculosis, confirmed by culture only, A15.2-Pulmonary tuberculosis, with histological confirmation, A15.3-Pulmonary tuberculosis, confirmed by unspecified methods, A15.4-Tuberculosis of intrathoracic lymph nodes, with bacteriological confirmation and histological, A15.5-Tuberculosis of the larynx, trachea and bronchi, with bacteriological and histological confirmation, A15.6-Tuberculous pleurisy, with bacteriological and histological confirmation, A15.7-First tuberculous infection of the respiratory tract, with bacteriological and histological confirmation, A15.8-Other forms of airway tuberculosis, with bacteriological and histological confirmation, A15.9-

Airway tuberculosis, unspecified, with confirmation

bacteriological and histological examination, A16.0-Pulmonary tuberculosis, with negative bacteriological or histological investigations, A16.1-Pulmonary tuberculosis, without bacteriological or histological investigations, A16.2-Pulmonary tuberculosis, without mention of bacteriological or histological confirmation, A16.3 - Tuberculosis of the intrathoracic lymph nodes, without mention of bacteriological or histological confirmation, A16.4-Tuberculosis of the larynx, trachea and bronchi, without mention of bacteriological or histological confirmation, A16.5-Tuberculous pleurisy without mention of bacteriological or histological confirmation, -First tuberculous airway infection, without mention of bacteriological or histological confirmation, A16.8-Other forms of airway tuberculosis without mention of bacteriological or histological confirmation, A16.9-Airway tuberculosis, unspecified, without mention of bacteriological confirmation or histological, A17.0-Tuberculous meningitis, A17.1-Tube meningeal tuberculoma, A17.8 + -Other forms of tuberculosis of the nervous system, A17.9-Tuberculosis of the nervous system, unspecified, A18.0 + -Tuberculosis of bones and joints, A18.1 + -Tuberculosis of the genitourinary tract, A18.2 -Peripheral tuberculous lymphadenopathy, A18.3-Tuberculosis of the intestine, peritoneum and mesenteric ganglia, A18.4-Tuberculosis of the skin and subcutaneous tissue, A18.5 + -Eye tuberculosis, A18.6 + - Ear tuberculosis, A18.7-Tuberculosis of the adrenal glands, A18.8 + -Tuberculosis of other organs, specified, A19.0-Acute miliary tuberculosis, single and specified location, A19.1-Acute miliary tuberculosis, multiple localizations, A19.2- Acute Miliary Tuberculosis, unspecified, A19.8-Other miliary tuberculosis, A19.9-Miliary tuberculosis, unspecified.

In accordance with the provisions of Law 190/2018 and of Art. 13 of EU Regulation no. 679/2016, personal data are deleted at the time of transmission to NSPHMPDHB, and the identification of persons for the purpose of analysis is based on encrypted personal identification code. The age of the patients was calculated in years of age, as the difference between the date of hospitalization and the date of birth.

Regarding in-hospital mortality, it was assessed through an indicator constructed by reporting the number of in-hospital deaths to the total number of hospitalization episodes.

The data were processed using the SQL Server Management Studio Express 2005 software, further processing and analysis was performed using SPSS and Excel. The analysis was performed based on a number of demographic and socioeconomic variables, such as the patient's gender, age, area of residence, length of stay in hospital, etc., information included in the minimum set of data reported in the DRG system by hospitals. The interpretation and presentation is done in the form of tables and graphs.

## RESULTS

The data from the National DRG database were processed, analyzed and interpreted according to a series of demographic variables and socioeconomic characteristics (sex, age, place of residence, length of hospitalization, in-hospital mortality, status at hospital discharge) and →

geographical distribution and temporal evolution of the hospitalization episodes caused by tuberculosis was identified in our country between 2015-2019.

1. *The total number of hospitalization episodes by tuberculosis reported in continuous hospitalization, registered in the period 2015-2019, at national level and their evolution in this period*

The total number of reported episodes of continuous hospitalization for patients with the main diagnosis of tuberculosis in the period 2015-2019 was 186393, representing a percentage of 0.9% of the total of 20636734 episodes of hospitalization recorded during this period. Of these, 95.6% were hospitalizations of patients with impaired lung and respiratory system, only a small part representing hospitalizations of patients with other locations.

In the classifications included in the category of respiratory tuberculosis we mention: pulmonary tuberculosis, confirmed only by cultures, tuberculosis confirmed by microscopic examination of sputum, with or without cultures (51% of the total), confirmed by unspecified methods, with histological confirmation, tuberculosis with negative bacteriological or histological investigations evidence (28% of the total) or without mention of bacteriological or histological confirmation; Tuberculosis of the larynx, trachea and bronchi, with or without bacteriological and histological confirmation; Respiratory tuberculosis, unspecified, with bacteriological and histological confirmation; Respiratory tuberculosis, unspecified, without mention of bacteriological or histological confirmation; Primo-tuberculous airway infection, with or without bacteriological and histological confirmation; Pulmonary tuberculosis, without bacteriological or histological investigations; Tuberculous pleurisy, with or without bacteriological and histological confirmation; Other forms of airway tuberculosis, with or without bacteriological and histological confirmation. Other types of localization, representing 4.4% of the total, include tuberculosis of the nervous system (tuberculous meningitis, meningeal tuberculoma, unspecified tuberculosis of the nervous system, other forms of tuberculosis of the nervous system), tuberculosis of the genitourinary tract, tuberculosis of the intestine, peritoneum and lymph nodes, tuberculosis of bones and joints (1.3%), eye, ear, skin and subcutaneous tissue, adrenal glands, other specified organs, tuberculosis of intrathoracic lymph nodes with or without bacteriological or histological confirmation, tuberculous lymphadenopathy, acute miliary tuberculosis, with single or multiple localization, other miliary tuberculosis - chart no.1.

Table no.1 shows that the trend of hospitalizations caused by this condition was a constant decreasing, in 2019 registering with a fifth fewer hospitalizations compared to 2015. The decreasing trend of the number of hospitalization episodes is observed in the case of localizations at the level of the respiratory tract and lungs (reduction by about 20%), but also in the case of miliary tuberculosis (reduction by more than half), tuberculosis of the genitourinary tract (also reduction by 50%) and tuberculosis of other organs. However, in other less common types of localizations, there were increases in the number of hospitalizations, such as tuberculosis of the skin and subcutaneous

cell tissue (doubling of hospitalizations), tuberculosis of the adrenal glands (a 5-fold increase) and ocular tuberculosis (from one hospitalization in 2015, to 7 in 2019). For the rest of the locations, variations were observed from one year to another, either a maintenance of the number of hospitalizations, or after an initial decrease, there was a subsequent increase close to the number of hospitalizations in 2015 - table no.1.

2. *Distribution of hospitalization episodes due to tuberculosis, at regional and local level, in the period 2015-2019*

The analysis of the absolute number of hospitalization episodes due to tuberculosis at regional level, in the studied period reveals that most hospitalization episodes were registered in the South West and South regions (13.1 and 11.6% of the national total, respectively), compared to the regions with the fewest hospitalization episodes by this main diagnosis, Center (5.8%) and South-East (8.9%) - chart no.2.

Compared to the population of each region, it is found that in 2019 the regions with the most episodes of tuberculosis hospitalization were the regions: South with 1943 episodes/100,000 inhabitants, South West with 1830 episodes/100,000 inhabitants and West with 1213 episodes at 100000 inhabitants. The South East and Center regions recorded the lowest values, 697 episodes, respectively 464 episodes/100,000 inhabitants - chart no.3.

Regarding pulmonary tuberculosis, the most hospitalization episodes were recorded in South West (34245 episodes), North East (29360) and South (29293 episodes) regions, and the least Bucharest Ilfov (15633 episodes), South East (14811) and center (10179) chart no. 4.

In relation to the number of inhabitants, it is observed that most of the hospitalization episodes had the regions South West (1785 episodes/100,000 inhabitants), West (1192 episodes/100,000 inhabitants) and South (1005 episodes/100,000 inhabitants), and the least Center region (439 episodes/100,000 inhabitants), South East (621 episodes/100,000 inhabitants) and Bucharest Ilfov (675 episodes/100,000 inhabitants) chart no.5.

At local level, most episodes of hospitalization by tuberculosis, in absolute numbers were recorded between 2015-2019 in Dolj and Olt counties and in Bucharest, over 10,000 episodes - chart no.6. At the opposite pole are counties such as: Sălaj and Harghita, under an absolute number of 1000 episodes, and Covasna recorded the lowest number 845 episodes.

Compared to the population of each county, at the level of 2019, per 100,000 inhabitants the counties where the patients with the most hospitalization episodes caused by tuberculosis come from were: Olt (2635 episodes/100,000 inhabitants), Călărași (2504 episodes/100,000 inhabitants), and Dolj (2212 episodes/100,000 inhabitants). The fewest hospitalization episodes were observed in Brașov County (287 episodes/100,000 inhabitants), and Dâmbovița, Sălaj, Suceava, Mureș, Harghita and Covasna counties, below 500 episodes/100,000 inhabitants - chart no.7.

Regarding the distribution of hospitalization episodes caused by pulmonary tuberculosis at local → 16

**Chart no. 1 Pulmonary and extrapulmonary locations that determined the episodes of hospitalization by tuberculosis, in the period 2015-2019**



**Table no.1 Tuberculosis locations in hospitalized patients in the period 2015-2019**

TB locations	2015	2016	2017	2018	2019	Total
Pulmonary and respiratory tract tuberculosis	40006	36906	34728	34795	31701	178136
Tuberculosis of bones and joints	640	415	347	536	609	2547
Nervous system tuberculosis	352	399	433	295	308	1787
Peripheral tuberculous lymphadenopathy	199	183	178	156	193	909
Miliary tuberculosis	223	111	138	130	97	699
Tuberculosis of the intestine, peritoneum and mesenteric lymph nodes	147	163	143	77	123	653
Tuberculosis of lymph nodes	121	140	125	123	110	619
Tuberculosis of the genitourinary tract	139	126	127	134	71	597
Tuberculosis of the skin and subcutaneous cell tissue	31	27	38	60	65	221
Tuberculosis of other organs, specified	37	57	53	20	19	186
Tuberculosis of the adrenal glands	3	2	2	5	17	29
Ocular tuberculosis	1				7	8
Ear tuberculosis		1	1			2
<b>Total</b>	<b>41899</b>	<b>38530</b>	<b>36313</b>	<b>36331</b>	<b>33320</b>	<b>186393</b>

level, in the period 2015-2019 most such episodes were recorded in Dolj, Olt and Bucharest counties (over 10,000 hospitalization episodes), compared to the lowest figures in Covasna and Sălaj, under 1000 episodes of hospitalization - chart no.8.

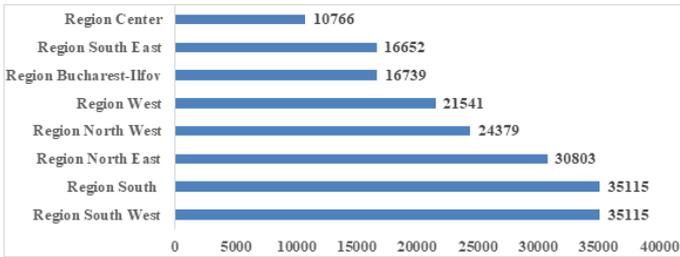
At local level, depending on the population of each county, in 2019 in counties such as Olt, Calarasi, Dolj were registered the most episodes of hospitalization/100,000 inhabitants, over 2000 episodes/100,000 inhabitants, the counties with the fewest episodes being Braşov (270 episodes/100,000 inhabitants) and Covasna (384 episodes/100,000 inhabitants) - chart no.9. The counties with less than 500 episodes/100,000 inhabitants were in addition to the two previously mentioned: Mureş, Harghita, Suceava, Dâmboviţa, Vrancea, Sălaj and Buzău.

### 3. Distribution of hospitalization episodes due to tuberculosis, by patient's gender

Of the total number of hospitalizations due to tuberculosis at national level, during the study period, the data analysis indicates that most belonged to males (76.2% of the total), similarly the figures for pulmonary tuberculosis are similar (77% men and 23% women). For the other locations of the infection, the same situation is observed, the predominance of men, except for the lymph node locations and in the case of tuberculous lymphadenopathy the hospitalization figures are higher for women - chart no. 10.

The evolution of the number of hospitalization episodes due to tuberculosis during the study period was a decreasing one in both sexes, in 2019 the decrease in the number of hospitalizations in continuous hospitalization being similar for both gender, with approx. 20% compared to the initial year - chart no.11.

Chart no.2 Distribution of hospitalization episodes due to tuberculosis, at regional level in Romania, in 2015-2019



Graph no.3 Distribution of hospitalization episodes due to tuberculosis by population, at regional level in Romania, during 2015-2019

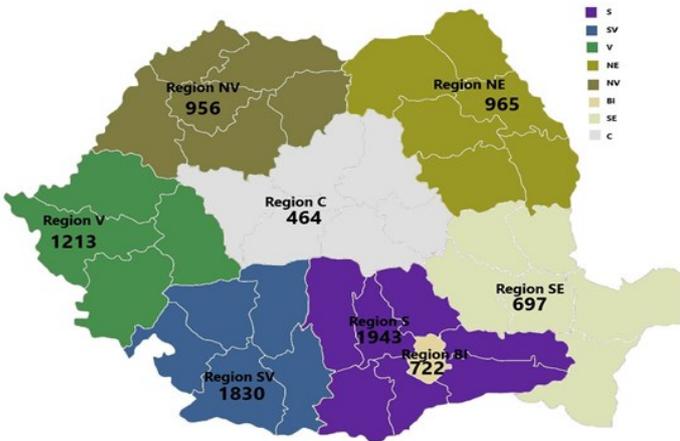
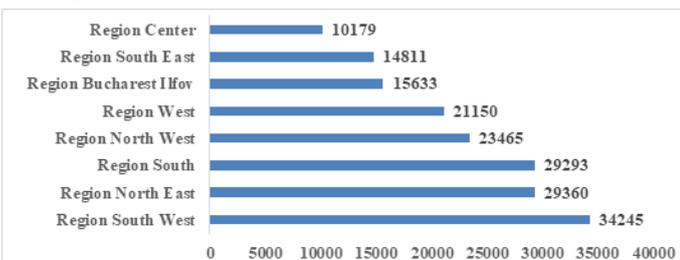


Chart no.4 Distribution of hospitalization episodes due to pulmonary tuberculosis, at regional level in Romania, during 2015-2019



Graph no. 5 Distribution of hospitalization episodes due to pulmonary tuberculosis by population, at regional level

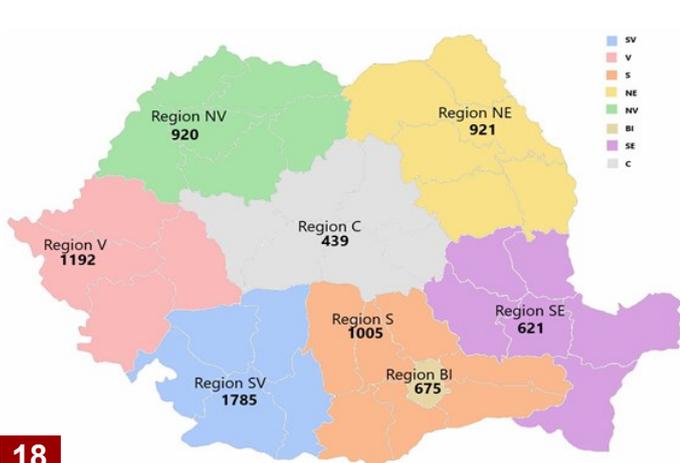
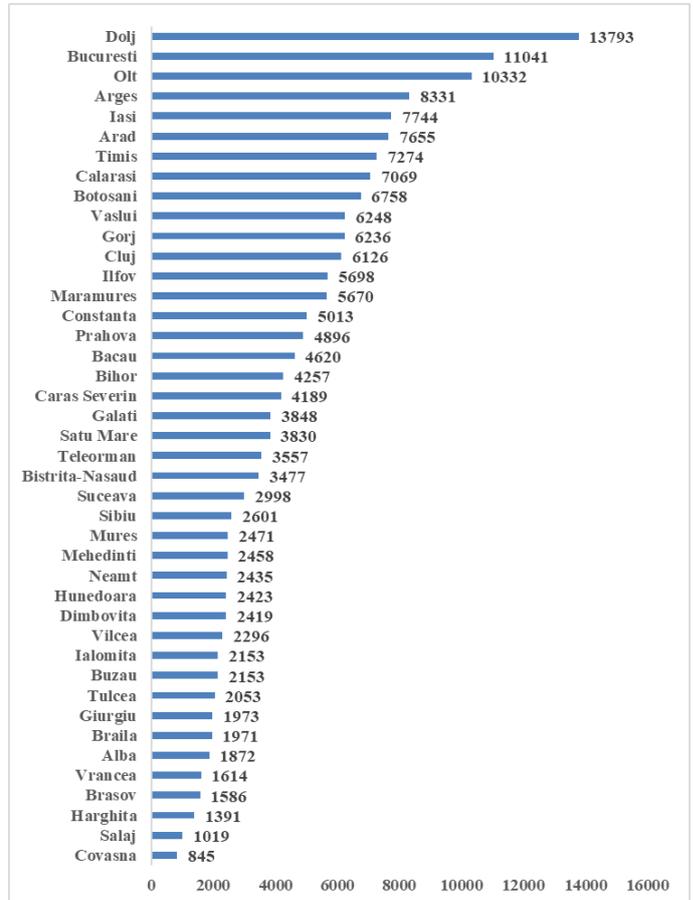
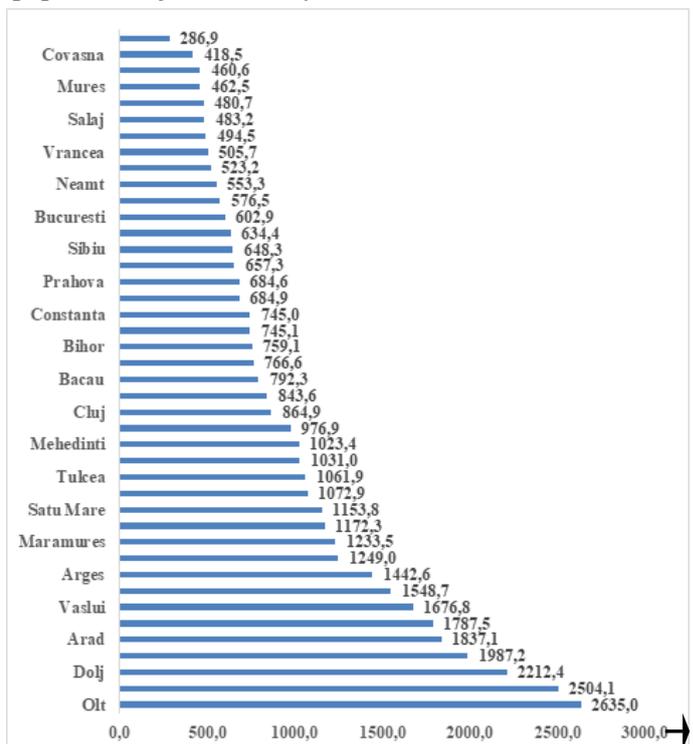


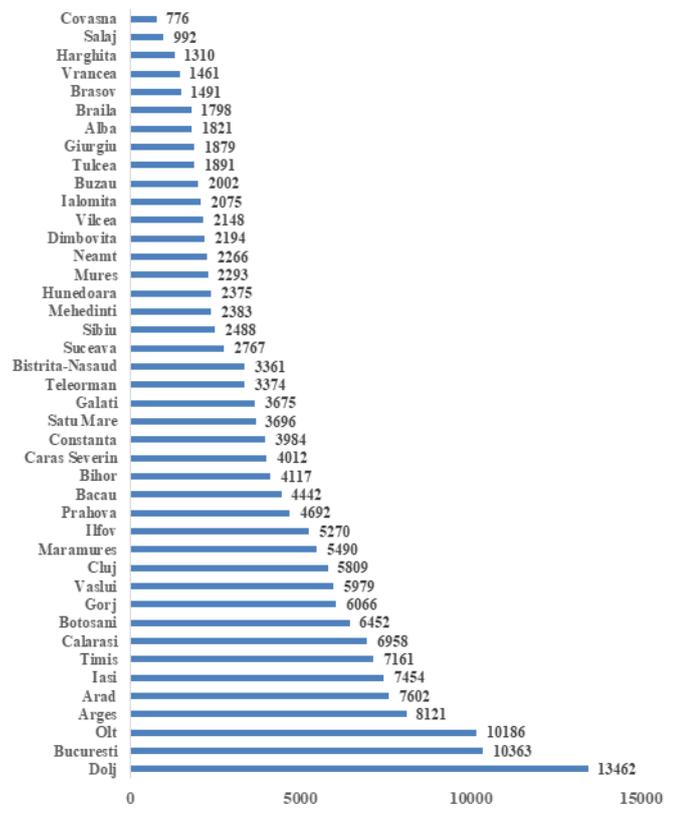
Chart no. 6 Distribution of hospitalization episodes due to tuberculosis, at local / county level, in Romania, during 2015-2019



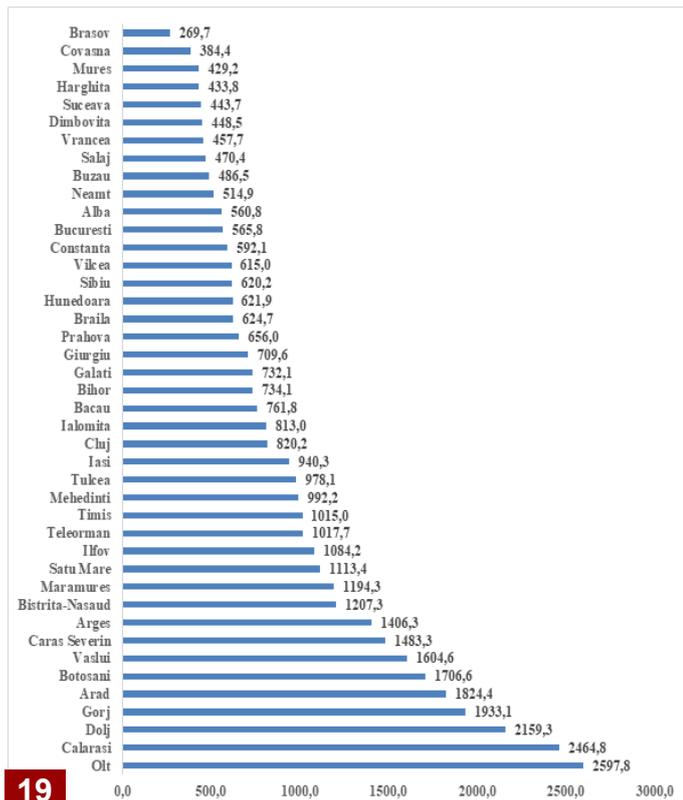
Graph no. 7 Distribution of hospitalization episodes due to tuberculosis at local level by population, related to the population of each county, in 2019



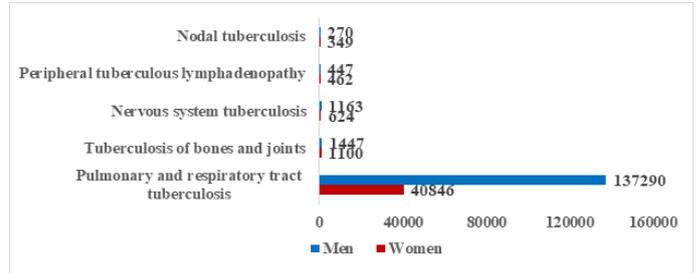
**Graph no.8 Distribution of hospitalization episodes due to pulmonary tuberculosis, at local / county level, in Romania, during 2015-2019**



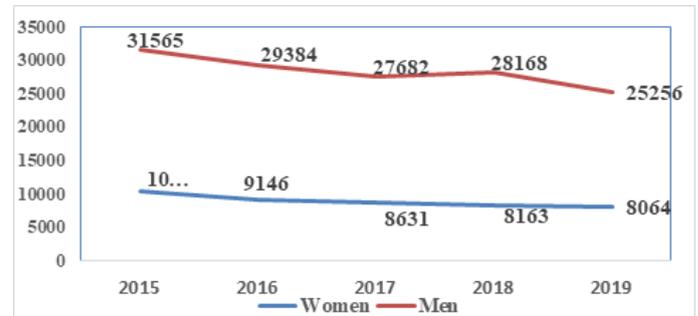
**Chart no. 9 Distribution of hospitalization episodes by pulmonary tuberculosis at local level, by population of each county, in 2019**



**Chart no.10 Distribution of hospitalization episodes due to tuberculosis, according to the patient's gender, in Romania, during 2015-2019**



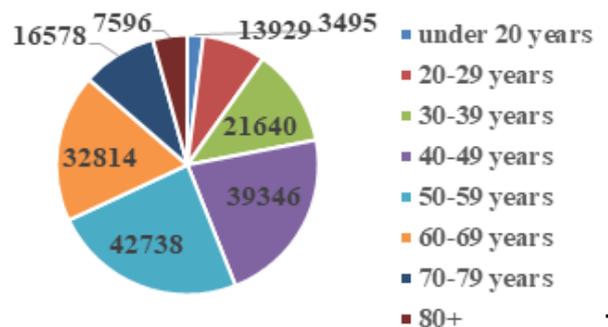
**Chart no. 11 Evolution of hospitalization episodes due to tuberculosis, depending on the patient's gender, in Romania, during 2015-2019**



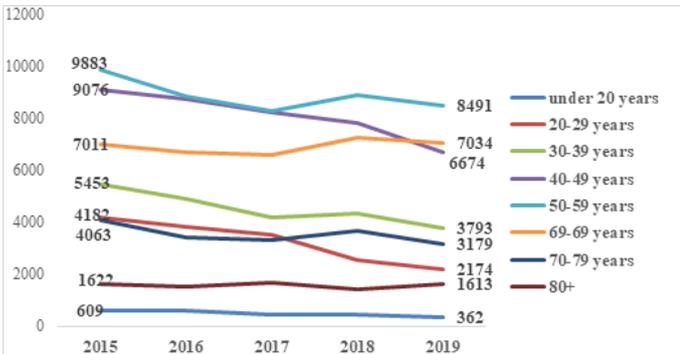
**Chart no. 12 Distribution of the number of hospitalization episodes due to tuberculosis according to the age groups of patients, in Romania, in 2015-2019**



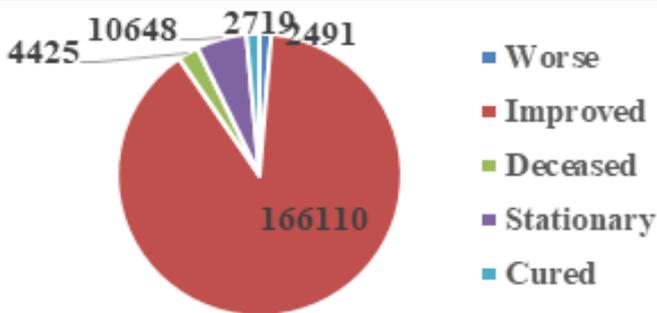
**Chart no. 13 Number of hospitalization episodes due to pulmonary tuberculosis, by the age groups of patients, in Romania, during 2015-2019**



**Chart no. 14 Evolution of the number of hospitalization episodes due to tuberculosis, by the age groups of patients, in Romania, in 2015-2019**



**Chart no. 15 Number of hospitalization episodes due to tuberculosis, depending on the state of discharged patients, in Romania, in 2015-2019**



**4. Distribution of hospitalization episodes due to tuberculosis, by patient's age**

The analysis of data by age groups indicates that at the national level, for the entire study period, most episodes of hospitalization were recorded in the age groups between 40 and 69 years (62% of the total), as follows: the most affected was the group of 50-59 years (approx. 24% of the national total), closely followed by the group of 40-49 years (22%) and those between 60-69 years (18.5%). A high percentage is also observed in the age category 30-39 years (12%), so the most affected are the professionally active categories. The lowest percentages are recorded for extreme ages, under 20 and over 80 - chart no.12.

In the case of pulmonary localization, most hospitalizations were registered at the same age categories - chart no.13.

From the point of view of the evolution during the five years, there is a decrease in the number of hospitalization episodes in all age groups, except for the age group 60-69 years where there is a slight increase - chart no.14. The most important reduction is observed in young age groups: young people under 20 (about 40%), those between 20-29 years (48%) and those between 30-39 years (30%). The same trend is found in case of pulmonary tuberculosis.

**5. Distribution of hospitalization episodes due to tuberculosis according to average length of hospital stay**

The average duration of hospitalization in the case of hospitalization episodes for tuberculosis was in the period

2015-2019, 38.6 days, with a value above the average indicated being hospitalizations due to pulmonary tuberculosis, confirmed only by cultures and pulmonary tuberculosis, confirmed by microscopic examination of the sputum, with or without cultures (45.8 days and 43.7 days, respectively). The rest of the diseases in this category had lengths of hospitalization below average. The lowest averages of hospital stay were recorded for Meningeal Tuberculoma (10 days) and Primo-tuberculous airway infection, without mention of bacteriological or histological confirmation (12.2 days). Evolutionarily, the average value of hospitalization has seen a slight increase in the last year compared to 2015 from 37.9 days to 39.6 days. At the level of the entire study period, the hospitals with the highest average length of hospitalization were those in Hunedoara (75 days) and Ilfov (74.8 days) counties, and in other counties such as Alba, Argeş, Bacău, Botoşani, Brăila, Braşov, Buzău, Constanţa, Damboviţa, Galaţi, Giurgiu, Mehedinţi, Neamţ, Prahova, Satu Mare, Sibiu, Teleorman, Vâlcea and Vrancea, the national average was exceeded.

**6. Distribution of hospitalization episodes due to tuberculosis, depending on the patient's discharge status and the share of in-hospital deaths**

The analysis of the data according to the patient's discharge status indicates that of the total number of episodes reported in continuous hospitalization due to tuberculosis, most resulted in patients discharged in an improved state (89%). About 6% registered stationary, and less than 2% were declared cured. 1.33% of the hospitalization episodes had an aggravated state of discharged patients, and 2.4% resulted in deaths - chart no. 15.

The share of episodes resulting in deaths was for the entire study period of 2.4%, with variations in values between 1.93% in 2015 and 2.87% in 2019. Regarding pulmonary tuberculosis, the same situation is found, with a high share of episodes resulting in improved patients (89.3%), a low share of those cured (1.4%), and the share of episodes ending in deaths throughout the period it was similar. In the case of the other types of locations, most episodes ending with the patient's death were recorded for the locations of the nervous system 4.9% and miliary tuberculosis 7.9%.

**CONCLUSIONS**

Following the analysis for the period 2015-2019 regarding the situation of hospitalization episodes, in the continuous hospitalization regime through tuberculosis in Romania, the following conclusions can be drawn:

- In the analyzed period less than 1% of the hospitalization episodes in continuous hospitalization was represented by hospitalizations caused by tuberculosis, with all its locations, the vast majority of hospitalizations targeted lung or airway damage;
- The evolution in the last five years of hospitalizations for this condition has been a decreasing one, the decrease being an important one, with about one fifth less hospitalizations due to tuberculosis and pulmonary tuberculosis or other respiratory localization, with more than half in the case of miliary or urogenital tuberculosis;

- In terms of geographical distribution, most hospitalizations due to tuberculosis were recorded by patients from the South West and South regions, and by pulmonary tuberculosis patients from the South West, North East and South regions; the counties that stand out with the highest absolute number of hospitalizations were: Dolj, Olt and Bucharest, and in relation to the population the counties of Olt, Călărași and Dolj;
- Men were the most frequently hospitalized for this condition, three quarters of the hospitalization episodes belonging to them; the situation is similar for all locations except for lymph node sites and tuberculous lymphadenopathy which have affected women the most;
- Patients from professionally active age groups were more frequently hospitalized with this condition, the most affected age groups being those between 40 and 69 years (62% of the national total); in terms of the trend over the study period, it was a decreasing one except for the age category 60-69 years where a slight increase was observed;
- The average duration of hospitalization in the case of hospitalization episodes for tuberculosis in the period 2015-2019 was 38.6 days, exceeding this value only hospitalizations for locations such as pulmonary tuberculosis, confirmed only by cultures and pulmonary tuberculosis, confirmed by microscopic examination of sputum, with or without cultures (45.8 days and 43.7 days, respectively), while the lowest averages of hospitalization duration were recorded for Meningeal Tuberculoma (10 days) and Primo-tuberculous airway infection, without mention bacteriological or histological confirmation (12.2 days); evolutionarily, the average value of the length of hospitalization has seen a slight increase in the last year compared to 2015 from 37.9 days to 39.6 days; the hospitals with the highest average duration of hospitalization were those in Hunedoara (75 days) and Ilfov (74.8 days) counties, and in other counties such as Alba, Argeș, Bacău, Botoșani, Brăila, Brașov, Buzău, Constanța, Dambovița, Galați, Giurgiu, Mehedinți, Neamț, Prahova, Satu Mare, Sibiu, Teleorman, Vâlcea and Vrancea the national average was exceeded.
- Approximately 90% of hospitalization episodes registered as discharged patients in an improved state, only a small percentage had a worse condition, and 2.4% resulted in deaths, the highest share of which was recorded in 2019 (2.87%); the highest percentages of hospitalization episodes resulting in deaths were observed in the case of localizations in the nervous system 4.9% and miliary tuberculosis 7.9%.

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