

## TUBERCULOSIS IN SIBIU COUNTY BETWEEN 2009 AND 2013

VIOLETA FRÂNCU<sup>1</sup><sup>1</sup>“Lucian Blaga” University of Sibiu

**Keywords:** tuberculosis, incidence, mortality, particularities, Sibiu County

**Abstract:** Tuberculosis (TB) remains one of the diseases with the highest mortality in the world. In 2013, 9 million people developed tuberculosis and 1.5 million died from this disease. Of the 9 million subjects who developed the disease, 1.1 million (13%) were human immunodeficiency virus positive patients (HIV-positive). Globally, TB mortality rate has dropped by an estimated 45% between 1990 and 2013, and the prevalence of tuberculosis declined by 41% at the same time.(1) This should accelerate progress in achieving the objectives of the Stop TB Partnership to reduce the disease by 50% by 2015. According to the World Health Organization (WHO), the end of 2015 marks a transition to a post-2015 global TB strategy (the End TB Strategy) that was approved by all Member States at the World Health Assembly on May 2014.(2) The overall goal of the strategy is to end the global TB epidemic until 2035, by a 95% reduction in TB deaths and a 90% reduction in TB incidence.

## INTRODUCTION

Tuberculosis is an infectious and contagious disease with chronic evolution, caused by *Mycobacterium tuberculosis*. It usually affects the lungs (pulmonary TB). Depending on the affected organ, there is also tuberculosis of bones and joints, renal tuberculosis, lymph node tuberculosis, urogenital tuberculosis, skin and eye tuberculosis (extrapulmonary TB).

The disease is airborne transmitted when pulmonary TB patients expel the germs through coughing. In general, a relatively small proportion of people infected with *Mycobacterium tuberculosis* will develop the disease. The probability of developing tuberculosis is much higher among people with HIV. Tuberculosis is also more common among men and it mostly affects the adults belonging to the active age groups. The most common method to diagnose TB globally is the microscopic examination of sputum (developed over 100 years ago). Following the recent findings, for the diagnosis of tuberculosis, rapid molecular tests including drug resistant TB are being used. If treated properly and timely tuberculosis heals. In the absence of treatment, it becomes chronic and leads to the death of the patient. Also, if treated incorrectly, it can turn into multidrug resistant tuberculosis (MDR-TB), as a result of the selection of resistant microbes to the usual treatment.

## PURPOSE

The purpose of this paper is to evaluate the peculiarities of morbidity and mortality from tuberculosis in Sibiu County, this disease representing a real public health problem in Romania and worldwide.

## MATERIALS AND METHODS

The present study is a descriptive, retrospective one conducted between 2009 and 2013. As a working method, I used the statistical processing of data provided by Sibiu Penumphthysiology Hospital Medical Statistical Office.

## RESULTS AND DISCUSSIONS

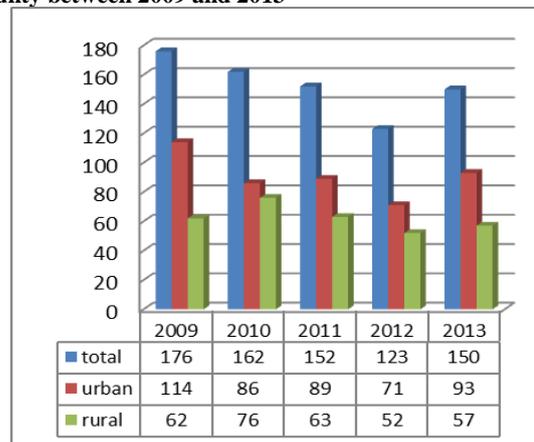
Following the collection and the statistical processing of data obtained, I analyzed pulmonary tuberculosis morbidity and mortality in Sibiu County, tuberculosis being one of the

communicable infectious diseases with the highest mortality in Romania and in the countries where the disease has not been eradicated.

Penumphthysiology Hospital of Sibiu serves the entire population of our county, but there is also addressability from the patients living in the neighbouring counties: Alba, Vâlcea Hunedoara and Braşov.

The total number of tuberculosis patients in Sibiu County decreased between 2009 and 2013, with small variations from year to year. The highest percentage of patients is from urban areas, where the population is actually larger compared to rural areas (figure no. 1).

**Figure no. 1** Number of tuberculosis patients in Sibiu County between 2009 and 2013



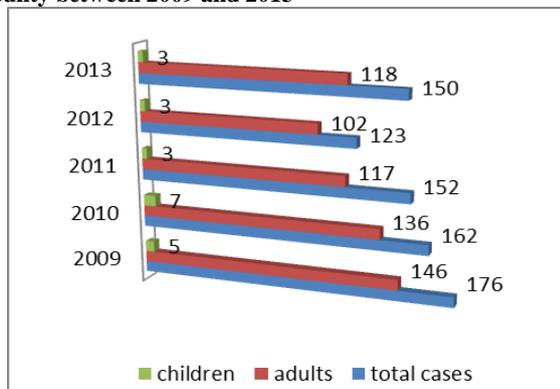
The incidence of tuberculosis is predominantly higher in adults throughout the study period, but the number of cases has decreased in the last 5 years in our county, both in adults and children.

Moreover, Sibiu has a much lower incidence of TB incidence than the national average, raking the last places in terms of incidence at national level, after the counties of Harghita and Covasna, which have the lowest incidence of tuberculosis in Romania (figure no. 2). The decreasing number

<sup>1</sup>Corresponding author: Violeta Frâncu, Str. Aleea Filozofilor, Nr. 3-5, Sibiu, România, E-mail: francuv@yahoo.com, Phone: +40269 210979  
Article received on 12.02.2015 and accepted for publication on 27.05.2015  
ACTA MEDICA TRANSILVANICA June 2015;20(2):16-18

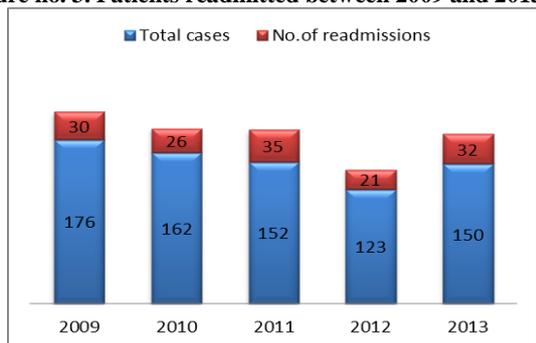
of new cases of tuberculosis in the past 10 years is due to the national strategy to fight tuberculosis – Directly Observed Treatment Short Course – (DOTS) recommended by the WHO, which has been implemented since 2005. Ever since, important progress has been registered in our country, as well as globally, in terms of controlling morbidity by this serious disease.

**Figure no. 2. Number of new tuberculosis patients in Sibiu County between 2009 and 2013**



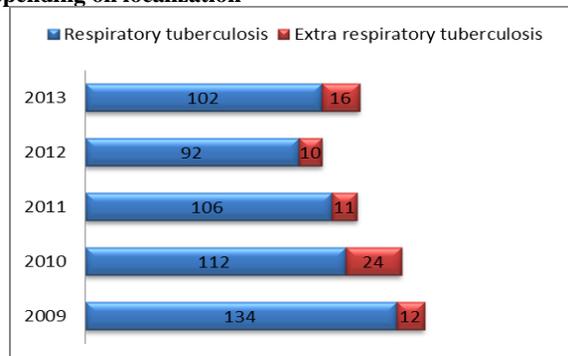
Of the 763 treated patients between 2009 and 2013, there were 144 cases of recurrence of the disease, i.e. a share of 18.87% (figure no. 3).

**Figure no. 3. Patients readmitted between 2009 and 2013**



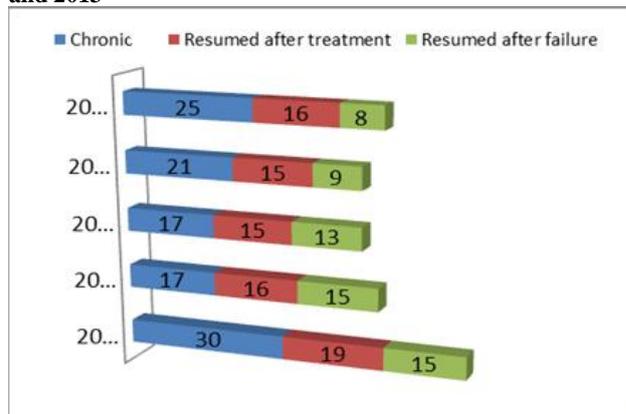
In terms of localization, most cases (80%) had pulmonary localization, but there is a smaller percentage of cases with localizations outside the respiratory system (figure no. 4).

**Figure no. 4. Number of patients with tuberculosis, depending on localization**



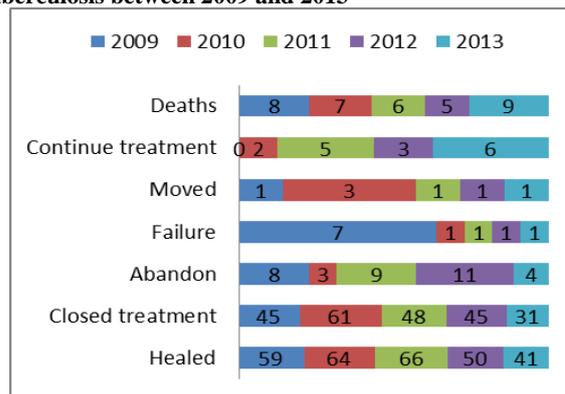
A major problem of epidemiological significance is represented by the drug-resistant tuberculosis cases, which unfortunately are increasingly expanding worldwide, constituting a very difficult obstacle to overcome in the disease control. The figure below shows the cases of tuberculosis (figure no. 5).

**Figure no. 5. Retreatment tuberculosis cases between 2009 and 2013**



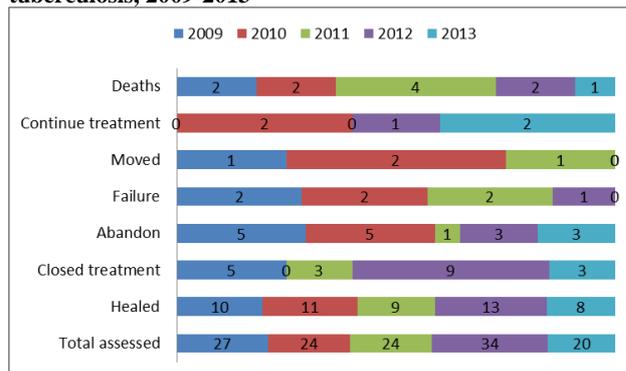
Of the 763 new cases of tuberculosis treated between 2009 and 2013, the majority of patients were cured and have completed the treatment, 35 patients dropped out the treatment; there were 11 cases of treatment failure, a part of patients were moved to other hospitals where treatment continued, and a total of 35 cases of tuberculosis suffered complications and death was registered (figure no. 6).

**Figure no. 6. Evolution under treatment of the new cases of tuberculosis between 2009 and 2013**



In terms of recurrence, of the 129 cases analyzed between 2009 and 2013, 55.03% were cured and have completed the treatment. The remaining patients, either abandoned the treatment (13.17%), or the treatment failed due to performing only partially the treatment indicated by the physician (5.42%). Some patients have resumed the treatment under medical supervision, but a percentage of 8.52% of those with severe forms of tuberculosis died (figure no. 7).

**Figure no. 7. Evolution under therapy of relapses of tuberculosis, 2009-2013**



## PUBLIC HEALTH AND MANAGEMENT

Between 2009 and 2013, we examined 1 904 patients prophylactically, belonging to vulnerable groups or tuberculosis infected. Of these, a percentage of 4.77% cases had pulmonary changes and in 1.2% of those evaluated, the diagnosis of tuberculosis has been confirmed (table no. 1). Also, during the studied period, epidemiological investigations were made on all people with tuberculosis, on average 172 per year. Within the epidemiological survey, there were found 58 suspected cases of tuberculosis and 25 confirmed cases of the disease (tables no. 1, 2).

4. Normele metodologice de implementare a Programului Național de Prevenire, Supraveghere și Control al Tuberculozei în România.
5. Planul Național de Control al Transmiterii Tuberculozei în România.

**Table no. 1. Prophylactic actions, 2009-2013**

Detections (year)	Number of detected persons (vulnerable groups, contacts)	Number of persons suspected of pulmonary changes	Number of persons confirmed with TB
2009	464	12	4
2010	460	38	4
2011	421	5	1
2012	368	21	11
2013	191	15	3

**Table no. 2. Prophylactic actions, 2009-2013**

Epidemiological investigations (year)	Number of examined persons (vulnerable groups, contacts)	Number of persons suspected of pulmonary changes	Number of persons confirmed with TB
2009	176	5	2
2010	162	14	2
2011	194	17	9
2012	180	14	7
2013	150	8	5

*Note:* The tables do not cover patients referred by: dispensaries, clinics, hospitals, as being TB suspects for diagnostic clarification.

### CONCLUSIONS

1. Tuberculosis remains one of the communicable diseases with the highest mortality in the world.
2. Following the implementation of the National Programme for Prevention, Surveillance and Control of Tuberculosis starting with 2005, this disease has began to be increasingly controlled in Romania, registering a gradual decrease in the incidence of the disease in the last 10 years.(3,4)
3. Sibiu is one of the counties with the lowest incidence of tuberculosis in the country, after the counties of Harghita and Covasna, where the lowest indicators of morbidity and mortality from tuberculosis are recorded at national level.(5)
4. In Sibiu, most cases of tuberculosis evolve positively towards healing, except for the patients who abandon the treatment, partially or totally.
5. The main obstacle for the disease remission is the multidrug resistant cases that become chronic and worsen, as a result of the selection of resistant microbes to the usual treatment, which leads in most cases to the patient's death.

### REFERENCES

1. [http://www.who.int/tb/publications/global\\_report/en/](http://www.who.int/tb/publications/global_report/en/).
2. Strategia Națională de Control al Tuberculozei în România 2013-2017.
3. Planul Național de Prevenire și Management al Tuberculozei Multidrog Rezistente în România 2012 -2015.