

## CAUSES OF DEATH AMONG DETAINEES: A STATISTICAL STUDY ON THE CASEWORK OF THE FORENSIC MEDICINE INSTITUTE IN CLUJ-NAPOCA DURING THE PERIOD 2000-2014

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### Abstract

**Background and aims.** *The detainees' right to healthcare is granted by laws, in accordance with EU directives and recommendations to which our country has consented. Prison population is a particularly vulnerable and marginalized group characterized by mortality rates different from the general population. This study aims at providing a picture of the causes of death, quality of healthcare and measures needed to reduce the number of in-prison deaths, including legal medicine expertise in view of sentence postponement/interruption.*

**Methods.** *The present paper is based on the statistical analysis of in-prison deaths casework recorded at the Forensic Medicine Institute of Cluj-Napoca and provided by territorially subordinated counties forensic services. The data collected cover over 15 years (2000-2014), a period long enough for significant retrospective statistical analysis.*

**Results.** *The total number of deaths among the inmates was 113, the majority of male sex (110). Distribution by age groups shows a greater incidence among inmates aged 50 to 59 years (32 cases, 28.31%), followed by those in their 40s' (30 cases, 26.54%) and 30s' (25 cases, 22.12%). The most frequent pathological causes of death were cardiovascular (53 cases) followed by tumors (26 cases) and infectious diseases. A significant number of deaths were due to violent causes (14 cases-12,38%).*

**Conclusions.** *Special problems are raised by the high number of deaths among prisoners, especially at a young age, while the high frequency of violent deaths from self- or non-self-inflicted traumatic causes requires supervision, monitoring and continuous analysis. Despite recent improvements, healthcare in prisons still poses some problems, mainly regarding diagnosis and treatment of heart diseases, neurosurgery and cancer.*

**Keywords:** prison, inmates, health care, mortality rate

### Background and aims

Deaths in prison are obviously correlated to the difficult conditions the detainees are facing in everyday life. Overcrowding, impoverished prison conditions, segregation and poor medical care have direct implications on people's mental and physical health.

It is a recognized fact that prisoners are a vulnerable

social group that are frequently unequally treated in terms of healthcare and therefore require special attention and protection [1]. In the past years legal provisions governing the inmates' healthcare and other detainees' rights were updated in view of the European recommendations [2,3,4]. Despite these governmental provisions, the prevalence of death cases in Romanian prisons remains a topical issue. A recent analysis of mortality cases in the National Administration of Penitentiaries (NAP) network indicates a number of 122 deaths during 2014 (3.86% out of a total number of 31.847 inmates), compared to 102 deaths

Manuscript received: 07.04.2015

Accepted: 23.04.2015

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(3.08%) in 2013. Causes of death were mainly due to disease (106 out of 122, 86.88%), most cases being related to cardiovascular diseases (49 cases, 40%), cancers (24 cases, 20%), respiratory (18 cases, 15%) and digestive diseases (15 cases, 12%) [5].

According to the Council of Europe Annual Penal Statistics – Space I – Prison Populations, Survey 2013, published in December 2014, a number of 115 detainees deaths occurred in Romania in 2012, of which 56 (including 5 women) were inside penitentiary hospitals, 20 (male) deaths were registered in the hospital units of the Ministry of Health and 39 deaths occurred inside prisons. The 2012 median mortality rate in Romanian prisons was 3.61%. In comparison, the European median mortality rate for prison populations was 2.8‰ in 2012, 2.6‰ in 2011 and 2.5 ‰ in 2010 [6]. One can see that these figures regarding mortality cases in the NAP network are significantly higher than the European median rate regarding prison populations. While in other European countries detainees presenting a wide range of medical conditions can be treated in public hospital units, under carefully enforced security measures, in Romania such facilities available for NAP inmates are severely limited, an issue requiring careful analysis.

This study aims at reaching some conclusions concerning the causes of death, quality of healthcare facilities and measures needed to reduce the number of in-prison deaths, including legal medicine expertise in view of sentence postponement/interruption, based on a statistical analysis of in-prison deaths casework recorded over the 2000-2014 period at the Forensic Medicine Institute in Cluj-Napoca. The Cluj Institute holds jurisdiction over 7 counties (Cluj, Alba, Bistrița-Năsăud, Maramureș, Satu Mare, Sălaj, Sibiu). Concerning the NAP network, the North-West region includes the maximum security penitentiary in Gherla (coordinating position), the prisons in Baia Mare, Bistrița and Satu Mare, as well as the penitentiary hospital in Dej. The latter takes in the more severe cases from all these prisons, as well as from the maximum security penitentiary in Aiud, recording a monthly turnover of more than 200 patients. Healthcare in Dej Penitentiary Hospital (with a total of 142 beds) is provided for a number of different medical specialties, including Internal Medicine, Cardiology, Ophthalmology, Surgery, Head-and-Neck, Anesthesiology and Intensive Therapy, Radiology and Laboratory Medicine [7].

## Methods

Information for the present paper is represented by specific data collected from the archives of the Forensic Medicine Institute in Cluj-Napoca and/or provided by territorially subordinated forensic services in Alba, Bistrița-Năsăud, Maramureș, Satu-Mare, Sălaj and Sibiu counties. The data covers over 15 years (2000-2014), a period long enough for significant statistical analysis. Under the current legislation it is mandatory that all deaths occurred during the

state of detention to be subjected to forensic autopsy in order to establish the exact causes of death. We have considered the total number of in-prison deaths, those occurring in prison or in the hospital prison in Dej. In all these cases the necropsies performed (macroscopic pathological diagnosis, microscopic and toxicological exams) resulted in a forensic diagnosis of certainty regarding the causes of death. Self- or non-self-inflicted trauma resulting in in-prison fatalities over the past 15 years, diseases, or sex distribution are documented as well.

Data processing aimed at establishing the prevalence of infaust pathologies and whether these causes of death correlated with the quality of care provided. Information regarding cases when legal medicine expertise in view of sentence postponement or interruption were/would have been recommended, cases when sentence was interrupted and death occurred in prison or prison hospital some time after the recommended duration of the interruption has expired, are also taken into account.

Informatively, all deceased detainees were Romanian citizens. According to declared ethnicity, 83 were Romanians, 23 were Hungarians and 7 belonged to the Roma minority.

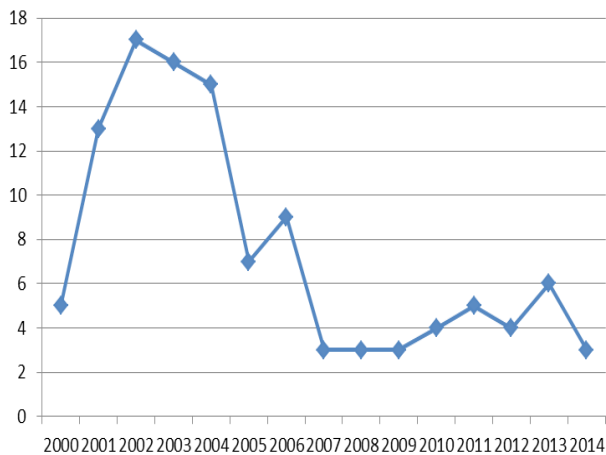
Tables and graphs highlighting statistical data were generated using the Microsoft Office Excel application.

## Results

Data analysis concerning the North-West prisons provided statistical information on the total number of deaths occurred during the past 15 years, areal and sex distribution, as well as the cause of death.

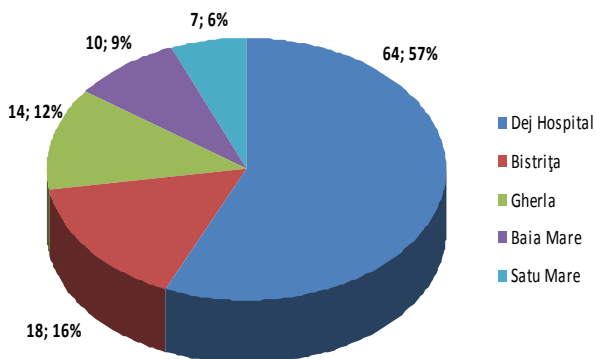
Within the 15 years timeframe, a total of 113 deaths were recorded in the North-West prisons of the NAP penitentiary system. Following a low figure of 5 registered in 2000, the number of death cases significantly increased during the 2001 – 2004 interval, reaching a maximal value of 17 in 2002. Following a significant decrease in 2005 - 2006 (7 and 9 cases, respectively), figures dropped even further once several European recommendations were enforced and stayed low until the end of the analyzed timeframe, the highest number of deaths recorded in the past eight years being 6 in 2013. Data are illustrated in Figure 1.

Of the 113 deaths within the inmates ranks in the North-West region, 78 (69%) were recorded in Cluj county, 18 in Bistrița-Năsăud (i.e. Bistrița prison), 10 in Maramureș (i.e. Baia Mare prison) and 7 in Satu-Mare county (i.e. Satu-Mare prison). Of the 78 cases in Cluj county, 14 occurred in Gherla prison – a maximal security unit which holds a regional coordinating position and arguably handles more difficult cases, while 64 (57% of the total figures) were recorded in the Dej penitentiary hospital and are reviewed later on. Distribution of death cases in counties/prisons for which medical expertise was under the jurisdiction of the Forensic Medicine Institute in Cluj are presented in Figure 2.



**Figure 1.** Distribution of annual North-West prison deaths in the timeframe 2000-2014.

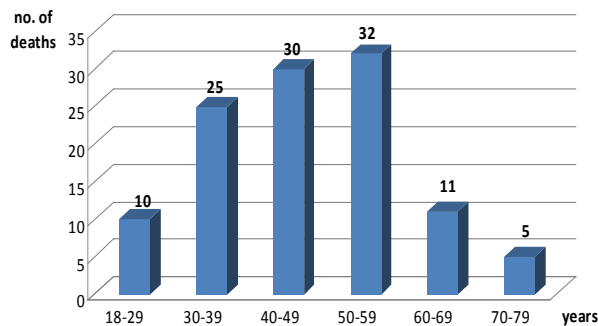
In 2013 the European median proportion of female inmates was 4.70% of the total prison population, while in 2012 it was 5.0%. Of these, 25% were pre-trial detainees. The situation in Romania is similar: in the North-Western prisons there is one female section, at Gherla. Consequently, the number of deaths among women was low, 3 out of 113 (2.7%), 110 of the cases of deaths recorded over the past 15 years in the area of study being male inmates.



**Figure 2.** Distribution of deaths in North-West prisons.

Distribution of death cases according to age groups reflects a greater incidence among inmates aged 50 to 59 years old (32 cases, 28.31%), followed by those in their 40s' (30 cases, 26.54%) and 30s' (25 cases, 22.12%). As highlighted in Figure 3, the youth (18-29 years of age) contributed with 10 cases (8.85%), while in the elders ranks 11 cases (9.73%) of deceased inmates aged 60 to 69 years and 5 cases of 70 years and older (4.42%) were recorded.

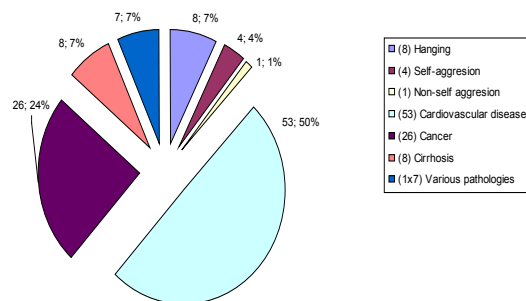
For all in-prison deaths occurring in the 15 years period forensic autopsy was, as mentioned, a mandatory procedure. Forensic autopsies established the manner of death (violent or non-violent), the cause of death and the



**Figure 3.** Distribution of inmate deaths in North-West prisons according to age groups.

moment it occurred. For a more systematic documentation, several pathological conditions revealed as the cause of death were grouped into tumor and cardiovascular diseases.

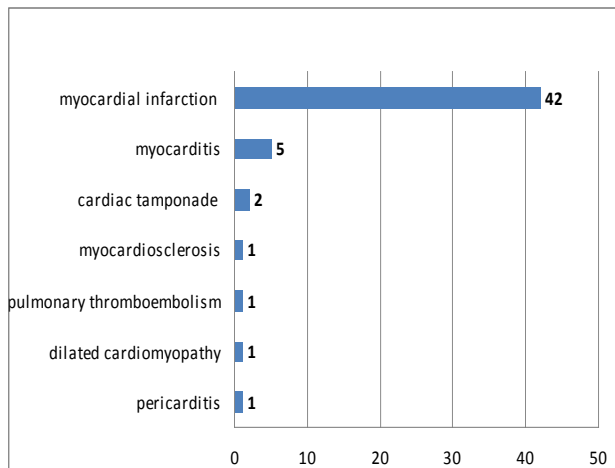
Autopsy findings revealed 14 cases of violent death (12.38%), of which 8 (7.07% of the total figure) were caused by mechanical asphyxia as a result of hanging and 4 cases (3.53%) were due to self-inflicted cranio-cerebral trauma. One case of death was related to non self-inflicted traumatic brain injury and another exogenous death-causing factor was drug poisoning (beta-blockers overdose). The number and percentage of death cases distributed according to the cause of death as established in post-mortem forensic examination are shown below.



**Figure 4.** Cause of death in North-West prisons 2000-2014.

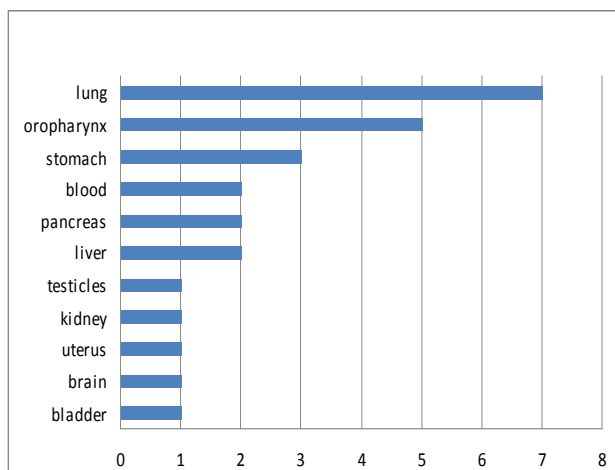
Next to cardiovascular diseases and cancer, of high prevalence among medical conditions resulting in fatalities were cirrhosis and infectious disease (8 cases each). The latter included 6 bronchopneumonia cases, a tuberculosis and an AIDS infestation, besides the 5 cases of myocarditis and 1 case of pericarditis included in the cardiovascular category. To conclude pathology aspects, in-prison deaths were also due to epilepsy, hemorrhagic necrotic pancreatitis and stroke.

Considering the most frequent death causes, the cardiovascular diseases, myocardial infarction had by far the highest prevalence (42 out of 53 cases), followed by myocarditis (5 cases of viral or bacterial infections) and cardiac tamponade (2 cases). One case each of dilated cardiomyopathy, myocardiosclerosis, pulmonary thrombembolism and pericarditis completed the cardiovascular casework, as seen in Figure 5.



**Figure 5.** Cardiovascular conditions resulting in in-prison deaths.

Considering deaths due to cancer, initial tumor locations were found to be lung – 7 cases, oropharynx – 5, stomach – 3, blood, pancreas and liver – 2 each, testicles, kidney, uterus, brain, bladder - 1 each, as reflected in Figure 6.



**Figure 6.** Tumor location in in-prison deaths due to cancer.

The place where the cancer deaths occurred is important as indicator in terms of primary care and diagnostic capabilities. As expected, in 23 of 26 tumor cases (88%) the diagnosis was confirmed in the Dej Penitentiary Hospital, where inmate-patients underwent treatment until their death. In 2 tumor cases death occurred in the Gherla prison and in one case in Bistrița prison.

Detainees whose medical condition cannot be adequately treated within the NAP sanitary network or under adequate security in specialized Ministry of Health units can benefit of sentence interruption or postponement, if a medical commission recommends it following a legal medicine expertise [4]. Three situations when sentences were interrupted on medical grounds were documented over the past 15 years in the area of study. Two of the inmates were patients of the Dej Penitentiary Hospital and benefited of sentence interruptions in 2001 and 2002 respectively. In both cases death occurred in the same year. Another case occurred in Gherla prison. The respective inmate benefited four times of sentence interruptions in 2000 and 2001. He died in 2001.

### Discussion

An analysis of the causes of in-prison deaths cannot be separated from examining the harsh prison conditions. Overcrowding, segregation, or poor medical care are directly affecting people's mental and physical health. However, alignment to European decisions and recommendations resulted in changes in terms of conditions and mentalities, despite several shortcomings of the penitentiary system in Romania.

To limit the effects of overcrowding, NAP has focused on infrastructure development in accordance with the European laws regarding detention standards. Besides conversion of administrative and school buildings or annex pavilions within NAP enclosures into detention buildings, renovation of 1380 detainees' housing spaces is envisaged in the near future, including 200 in Baia Mare prison and 80 in Aiud. Work will begin in 2015 [5].

This statistical study regarding deaths that occurred over the past 15 years in the North-West prisons highlights a decreased prevalence over the past ten years as a result of improvements in general detention conditions, including detainees' healthcare. Within the mentioned timeframe, a total of 113 deaths were recorded in the region. One can notice that, following a number of 5 deaths registered in 2000, there was a significant increase during the 2001 – 2004 interval, leading to a maximal value of 17 in 2002. The following years, 2005 and 2006, brought a significant decrease (7 and 9 death cases, respectively). However, once Romania entered the European Union, figures dropped even further and remained on a low prevalence plateau. The highest number of deaths recorded in the past eight years was 6, in 2013. Evolution over the study interval is presented in Figure 1. From the 17 cases in 2002 to only 3 in 2014, a decrease of more than 500% is noted.

Of the 113 deaths within the inmates ranks in the North-Western region, 78 (69%) were recorded in Cluj county. Concerning the other 35, 18 in-prison deaths occurred in Bistrița-Năsăud (i.e. Bistrița prison), 10 in Maramureș (i.e. Baia Mare prison) and 7 in Satu-Mare



county (i.e. Satu-Mare prison). Of the 78 cases in Cluj county, 14 occurred in Gherla prison – a maximal security unit which arguably handles more difficult cases, while 64 (57% of the total figures) were recorded in the Dej penitentiary hospital and are further reviewed.

Distribution of the 113 death cases according to age groups were as follows: 10 cases aged 18-29 years (8.85%), 25 cases aged 30-39 years (22.12%), 30 cases aged 40-49 years (26.54%), 32 cases aged 50 to 59 years (28.31%), 11 cases aged 60 to 69 years (9.73%) and 5 cases of 70 years and older (4.42%). Overall, 14.15% were over 60 years, an age where special needs require specially trained personnel and other facilities [8]. However, casualties can be regarded as normal under the circumstances. The 10 youth cases are not related to major health problems, but rather ill-temper or maladaptive situations. The focus on healthcare issues concerns the rest of the inmates, the 76.97% aged 30-59. The highest prevalence occurred in the 50-59 years age group (28.31%) and, in view of harsh prison conditions, a relative normality could be extended to cover this sector as well. Still, half of the deceased detainees (48.66%) were aged 30 to 49 years, “too young to die” even considering detention circumstances. Regarding sex distribution, 3 out of 113 (2.7%) cases of women inmates deceased over the past 15 years correlates with the inmate sex ratio, the overwhelming majority of which are men.

Special attention should be given to deaths caused by exogenous factors. The mandatory forensic autopsy revealed 14 cases of violent death (12.38%), of which 8 (7.07% of the total 113 figure) were caused by mechanical asphyxia as a result of hanging and 4 cases (3.53%) were due to self-inflicted cranio-cerebral trauma. Another case was related to drug poisoning (beta-blockers overdose). In completion, one non self-inflicted traumatic brain injury was the result of third party aggression. Overall, in 13 cases (11.5%) the cause of death was self-inflicted. This is a major problem in many countries, for example in France 353 suicides (a rate of 17.9 suicides per 10,000 inmates) were recorded between the years 2006-2009 [9]. Considering the European statistics for 2012 [6], Romanian figures are not really alarming. Except for Bosnia, Greece, Russia and Ukraine, where data were not available, the European average suicides/in-prison deaths ratio was 23%, while for Romania the figures were 19.1% (22 of 115), quite reasonable when comparing to 57.8% (96/166) in France, 47.9% (57/119) in Germany, 36.6% (56/153) in Italy, 32.7% (16/49) in the Czech Republic or 31.3% (60/192) in Great Britain. However, special surveillance and intervention measures need to be designed to prevent the occurrence of violent in-prison deaths.

Forensic autopsies revealed a somewhat wide range of medical conditions resulting in in-prison deaths over the study timeframe, as documented in the Cluj Forensic Medicine Institute’s archives. A full review is illustrated in Figure 4.

The most common pathological cause of death were cardiovascular diseases - 53 cases (47%). Among these there was a very high incidence of myocardial infarction (42 deaths), aspect that highlights the need to improve specific cardiologic and cardiology-interventional measures. Viral or bacterial infections are another area requiring attention, as infectious myocarditis was determined to be the cause of death in 5 cases. Cardiac tamponade (2), dilated cardiomyopathy, myocardiosclerosis, pulmonary thrombi embolism and pericarditis completed the casework. Tumor pathology, established as a cause of death in 26 cases (23%), poses difficult problems to the penitentiary healthcare system, as special issues of diagnosis, therapy, psihosocial support and paliative care under a regime of strict security are involved.

Diagnostic examinations and highly specific treatment (radiotherapy, chemotherapy) calls for specialist medical personnel. Such task can be completed in a limited number of oncological units in the public health system (i.e. the Oncology Institute in Cluj-Napoca for the areal of this study). Guarded transport to such locations and therapy sessions raise several logistical problems. On the other hand, psycho-social support and paliative care need resources that are not yet adequately available in the public health system. For a statistical review, initial tumor locations were found to be lung – 7 cases, oropharynx – 5, stomach – 3, blood, pancreas and liver – 2 each, testicles, kidney, uterus, brain and bladder - 1 each.

Next to cardiovascular diseases and cancer, of high prevalence among medical conditions resulting in fatalities were cirrhosis and infectious diseases (8 cases each). The later included 6 bronchopneumonia cases, a tuberculosis and an AIDS infestation, besides the 5 cases of myocarditis and 1 case of paricarditis included in the cardiovascular category. To conclude pathology aspects, in-prison deaths were also due to epilepsy, hemorrhagic necrotic pancreatitis and stroke.

A number of 64 death cases (57% of the total figure) were recorded in the Dej penitentiary hospital, including 23 of the 26 cancers (88%). This is relevant in terms of primary care and diagnostic capabilities for the region’s prison sanitary network, as most cases were diagnosed or suspected in somewhat early stages and inmate patients were sent to the best medical unit available. On the other hand, considering a monthly rate of 200 patients in the Dej Penitentiary Hospital, the relatively low number of deaths (41 in 15 years, if excluding cancer patients whose life expectancy would have been limited even if undergoing treatment outside the NAP system) underlines significant improvements in one of the leading institutions within the NAP sanitary system.

An increasing number of emergency admissions recorded year after year, including inmate-patients from outside the North-West prisons, argues for an increased addressability of the Dej penitentiary hospital.

Consequently inmates' admissions in public health units are less frequent. Dej hospital's good reputation is based on high quality human resources, but on the administration quest to permanently improve health care as well.

Numerous programs dedicated to healthcare improvement were implemented, specialist MDs and highly qualified nurses were recruited and modern equipment was brought in as part of the Ministry of Justice policy to maximize medical treatment of detainees within the penitentiary sanitary network. A series of internationally funded programs have been developed in recent years, such as:

- The "Health educators among prison Inmates" program financed by the Global Fund to Fight HIV/AIDS, TB and Malaria;

- Voluntary Counseling and Testing services in penitentiaries;

- Drug prevention in prisons.

Along these several national programs were implemented as well:

- Health education in Romanian prisons;

- National tuberculosis control program in prisons;

- Prevention and control of nosocomial infections in prison hospitals

- The national program to combat drug trafficking.

Taking a look back, the medical activity in Dej Penitentiary Hospital has achieved its goals to raise healthcare services to high standards, providing adequate facilities in terms of equipment and specialized personnel. But Dej Hospital was not the only NAP North-Western prison that benefited the Ministry of Justice efforts to improve the penitentiary system. Besides the rehabilitation of 200 housing spaces in Baia Mare scheduled to start this year, a new therapeutic center for women is to be developed in Gherla penitentiary, in a former carpentry workshop. This work also starts in 2015. At the same time clinical protocols were developed for women deprived of their liberty and suffering from depression or anxiety. At present these are at a pilot stage [5].

Despite significant improvement in healthcare, a number of medical conditions cannot be adequately treated within the NAP sanitary network and actual possibilities to provide treatment in specialized Ministry of Health units under adequate security are rather limited. In such cases an alternative option for the inmate (or prosecutors) is to request a sentence postponement or interruption [10]. Inmates can benefit such right if they suffer from a disease that cannot be treated in the NAP sanitary network or under permanent surveillance in public health system's secure units, provided a legal medicine expertise recommends such course of action to be taken. In this situation, the execution of the sentence is postponed or interrupted for a determined period of time, until the convict can execute the penalty [4]. While there is a tendency among inmates to take advantage of the possibilities these legal provisions

allow, a great deal of unjustified requests being filed every year and to little success lately, nonetheless this procedure does justice to inmates in serious difficulty in terms of medical condition.

### Conclusions

- Overcrowding and poor medical care are general problems in European prisons that directly affect people's mental and physical health.

- Implementation of European recommendation on detention conditions resulted in better housing, improved healthcare and, consequently, a significant reduction in the number of in-prison deaths. In Romania's North-West prisons a major drop in yearly death rates was noted over the past decade.

- While in Western European countries most pathological conditions can be securely treated in public health units and the high number of in-prison suicidal deaths is the hottest issue, among Romanian inmates suicide ideation is less popular and the penitentiary system's greatest vulnerability in terms of healthcare concerns early diagnostic and adequate treatment capabilities. Further efforts are needed towards improving healthcare conditions, in particular for diagnosis and treatment of cardiovascular diseases and tumors.

- Prevention of violent deaths among inmates needs intensified efforts.

- Early identification of pathological conditions, referral to specialists for diagnosis and hospitalized treatment or legal medicine expertise in view of sentence suspension/interruption will reduce the number of in-prison deaths.

### References

1. Shaw D, Elger B. Improving public health by respecting autonomy: Using social science research to enfranchise vulnerable prison populations. *Prev Med.* 2015;74:21-23.
2. Ministerul Justitiei – MJ si Ministerul Sanatatii - MS Ordin comun nr. 429/2012 – privind asigurarea asistentei medicale persoanelor private de libertate aflata in custodia Administratiei Nationale a Penitenciarelor, cap. II, art. 8-10, publicat in Monitorul Oficial al Romaniei, Partea I nr. 124 (din 21 Februarie 2012) / Ministry of Justice and Health Joint Order no. 429/2012 - on providing medical care to inmates in the custody of the National Administration of Penitentiaries, chapter II, articles 8-10, published in Official Gazette of Romania, Part I no. 124 (February 21, 2012).
3. Legea nr. 254 din 19 Iulie 2013 - privind executarea pedepselor si a masurilor privative de libertate dispuse de organele judiciare in cursul procesului penal, publicata in Monitorul Oficial al Romaniei, partea I nr. 514 (din 14 August 2013) / Law no. 254/19.07.2013 concerning the execution of sentences and custodial measures ordered by the court following criminal trials (published in the Official Gazette of Romania, Part I no. 514 (August 14, 2013).
4. Noul Cod de Procedură Penală - adoptat prin Legea nr. 135/2010, publicata în Monitorul Oficial nr. 486 din 15 Iulie 2010, în vigoare din 1 Februarie 2014, actualizata prin: OUG nr. 3/2014

(Monitorul Oficial 98/2014) si Legea nr. 255/2013 (Monitorul Oficial 515/2013). Available from: <http://legeaz.net/noul-cod-procedura-penala-ncpp/> / The New-Revised Romanian Criminal Procedure Code - adopted by Law no. 135/2010, published in Official Gazette no. 486 (July 15, 2010), in force since February 1, 2014, updated by: Government Emergency Ordinance no. 3/2014 (Official Gazette 98/2014) and Law no. 255/2013 (Official Gazette 515/2013)

5. Raport de activitate al Administratiei Nationale a Penitenciarelor pe anul 2014, available from URL: <http://anp.gov.ro/documents/10180/4605968/Raport+de+activitate+al+ANP+pe+anul+2014.pdf/318e6305-8299-44c8-b016-a64f6465a670>  
The National Administration of Penitentiaries' 2014 Activity Report.

6. Council of Europe Annual Penal Statistics – Space I – Prison Populations, Survey 2013. Available from: <http://wp.unil.ch/space/files/2015/02/SPACE-I-2013-English.pdf>.

7. The National Administration of Penitentiaries' website: Dej Prison Hospital. Available from: <http://anp.gov.ro/web/penitenciarul-spital-dej>.

8. Senior J, Forsyth K, Walsh E, O'Hara K, Stevenson C, Hayes A, Short V, Webb R, Challis D, Fazel S, Burns A, Shaw J. Health and social services for older male adults in prison: the identification of current Service Provision and piloting of year assessment and

care planning model. NIHR Journals Library HS&DR, Volume 1, Issue 5, Aug. 2013.

9. Duthie G, Hazard A, Kensey A, Shon JL. Suicide among male Prisoners in France: a Population-Based Prospective Study. *Forensic Sci Int.* 2013;233(1-3):273-277.

10. Legea nr. 459/2001, publicata in M.O. al Romaniei, Partea I, nr. 418 (din 27 Iulie 2001) care aproba O.G. nr. 1/2000, publicata in M.O. al Romaniei Partea I, nr. 22 (din 21 Ianuarie 2000) privind organizarea activitatii si functionarea institutiilor de medicina legala si Legea nr. 271/2004, publicata in M.O. al Romaniei, Partea I nr. 616 (din 07 Iulie 2004) prin care a fost aprobata O.G. nr. 57/2001, publicata in M.O. al Romaniei, Partea I nr. 531 (din 31 August 2001) pentru modificarea si completarea O.G. nr. 1/2000 / Law no. 459/2001 published in the Official Gazette of Romania, Part I, no. 418 (July 27, 2001) approving Government Emergency Ordinance no. 1/2000 published in the Official Gazette of Romania, Part I, no. 22 (January 21, 2000) regarding the organization and functioning of Legal Medicine Institutions and Law no. 271/2004 published in the Official Gazette of Romania, Part I no. 616 (July 07, 2004) approving Government Emergency Ordinance no. 57/2001 published in the Official Gazette of Romania, Part I no. 531 (August 31, 2001) amending and supplementing Government Emergency Ordinance no. 1/2000.