



E-ISSN: 2707-4455  
P-ISSN: 2707-4447  
IJFM 2024; 6(1): 13-17  
[www.forensicpaper.com](http://www.forensicpaper.com)  
Received: 09-11-2023  
Accepted: 21-12-2023

**Nguyen Duc Nhu**

1. National Institute of Forensic Medicine, Vietnam
2. Department of Forensic Medicine, VNU University of Medicine and Pharmacy, Hanoi, Vietnam

**Dao Hoang Diem**

1. National Institute of Forensic Medicine, Vietnam
2. Department of Forensic Medicine, VNU University of Medicine and Pharmacy, Hanoi, Vietnam

**Corresponding Author:**

**Nguyen Duc Nhu**

1. National Institute of Forensic Medicine, Vietnam
2. Department of Forensic Medicine, VNU University of Medicine and Pharmacy, Hanoi, Vietnam

## Characteristics of cases required for health assessment at the National institute of forensic medicine in the years 2014-2023

Nguyen Duc Nhu and Dao Hoang Diem

DOI: <https://doi.org/10.33545/27074447.2024.v6.i1.a.70>

### Abstract

Health assessment is one of the tasks of forensic medicine in Vietnam to determine someone's health is impaired or the medical condition, helping the authorities to resolve matters accurately, objectively, and in accordance with the law in investigation, prosecution, trial, and execution of sentences. A cross sectional study was conducted at National Institute of forensic medicine of Vietnam in order to describe characteristics of cases required for health assessment. Research results on 98 cases required for health assessment showed that: The group age from 41 - 50 years old accounted for the highest proportion with 27.55%; health assessment for investigation accounted for the highest rate of 59.18%; the results of the assessment confirmed the presence of disease, accounted for 60.20%, disease but had stabilized treatment with 31.63% and without disease 8.16%; among the group of disease, urinary and genital diseases accounted for the largest number with 32.65%, followed by musculoskeletal diseases with 24.48%, cardiovascular diseases with 16.32%....; the group of people with one disease accounted for the highest rate with 59.18%, the remaining were cases with many combined diseases.

**Keywords:** Health assessment, forensic medicine

### Introduction

Health assessment is one of the mandatory requirements for many people in cases requiring postponement or suspension of prison sentences in Vietnam <sup>[1]</sup>. Previously, health assessment mainly served the court to determine whether the person was healthy enough to serve a prison sentence or to postpone the execution of the sentence <sup>[2]</sup>. However, the cases of assessment are increasingly expanding as investigation agencies request them to determine whether or not someone is sick or how their health has been impaired in cases feigning illness, transmission disease, poisoning or being involved in various legal dispute situations. In addition, health assessment also serves cases related to working accidents, compensation, insurance or other civil cases. Forensic medicine experts often have to examine increasingly complex cases with diverse medical conditions and must answer difficult questions from agencies soliciting and requesting assessments. The people examined are mainly prisoners or defendants with diverse medical conditions, many serious diseases combined together, so determining the main disease, combined diseases and diseases that are the consequences of the main diseases is also very complicated. In addition, to serve the investigation, prosecution, and trial, the prosecution agencies need to determine whether people have a dangerous disease or not, which is also an issue that the experts need to answer. Therefore, we researched the study "Characteristics of cases required for health assessment at the National Institute of Forensic Medicine in the years 2014-2023" with the goal: Describe characteristics of cases required for health assessment.

### Materials and Methods

A total of 98 cases were assessed to determine health status at the National Institute of Forensic Medicine, Vietnam who have assessment conclusions, from January 2014 to October 2023. Before being conducted, the research was approved by the National Institute of Forensic Medicine's scientific council. Basic information collected includes age, gender, occupation, reason for health assessment, requirement agency, results of disease determination, disease classification, etc.

The collected results are analyzed statistically. The health assessment process is carried out according to Circular No. 47/2013/TT-BYT dated December 31<sup>st</sup>, 2013 of the Ministry of Health [3]. Then, forensic examination to determine health status is being followed by examiners according to Circular No. 13/2022/TT-BYT dated November 30<sup>th</sup>, 2022 of the Ministry of Health [4].

**Results**

**Table 1:** Gender distribution

Gender	N	Percentage
Male	82	83.67%
Female	16	16.33%
Total	98	100%

Of the 98 cases assessed, men accounted for the majority with 82 cases (83.67%), and women were less with 16 cases (16.33%).

**Table 2:** Age distribution

Age	N	Percentage
≤ 10	24	24.49%
11-20	2	2.04%
21- 30	5	5.10%
31-40	19	19.39%
41-50	27	27.55%
51-60	12	12.24%
> 60	9	9.18%
Total	98	100%

The age group of 41 - 50 years old accounted for the highest proportion with 27.55%, followed by the group ≤ 10 years old accounted for 24.49%, age group 31-40 (19.39%), other groups accounted for a small proportion respectively: 51-60 (12.24%); > 60 (9.18%); 21- 30 (5.10%); Age group 11-20 accounted for lowest rate of 5.10%.

**Table 3:** Classification by occupation

Occupation	N	Percentage
Pupil	24	24.49%
Civil servant	4	4.08%
Worker	40	40.82%
Famer	2	2.04%
Self-employed	8	8.16%
Criminal or prisoner	20	20.41%
Total	98	100%

Workers accounted for the highest proportion with 40.82%; next were pupils, 24.49%; criminals or prisoners, 20.41%; self-employed, 8.16%; civil servants, 4.08%; The lowest was the farmer group, 2.04%.

**Table 4:** Reasons for health assessment

Reasons for health assessment	N	Percentage
For postponing execution of sentence	13	13.27%
For prisoners, criminals	7	7.14%
To serve investigation	58	59.18%
For insurance benefits	19	19.39%
Other reasons	1	1.02%
Total	98	100%

Health assessment for serving an investigation accounted for the highest rate of 59.18%; for insurance benefits at 19.39%;

for postpones execution of sentence 13.27%; health assessment for prisoners, criminals 7.14%; other reasons 1.02%.

**Table 5:** Classification of requirement agencies

Requirement agencies	N	Percentage
Investigation agency	56	57.14%
Court	4	4.08%
Procuracy	3	3.06%
Prison	4	4.08%
Insurance company	31	31.63%
Total	98	100%

**Among the requirement agencies:** Investigation agencies accounted for the highest solicitation rate of 57.14%; Insurance companies accounted for 31.63%; Prisons and Courts both was 4.08%, with the Procuracy at least 3.06%.

**Table 6:** Results of determining health status

Results	N	Percentage
Determine to have currently disease	59	60.20%
Determined to have disease that had stable treatment	31	31.63%
Currently there is no disease	8	8.16%
Total	98	100%

The results of the assessment determined that 60.20% had disease, 31.63% determined to have disease but had stable treatment and 8.16% without disease.

**Table 7:** Results of disease classification

Disease	n	Percentage
Cardiovascular disease	16	16.33%
Respiratory disease	3	3.06%
Neuropathy	12	12.24%
Digestive diseases	5	5.10%
Urinary and genital diseases	32	32.65%
Cancer	7	7.14%
Metabolic disease	4	4.08%
Musculoskeletal diseases	24	24.49%
Ear, nose and throat (ENT) disease	11	11.22%
Ophthalmology disease	7	7.14%
Blood and hematopoietic organs disease	4	4.08%
Infectious disease	1	1.02%
HIV	1	1.02%
Other disease	14	14.29%
Total	98	100%

Urological and genitourinary diseases accounted for the largest number with 32.65%, followed by musculoskeletal diseases (24.49%), cardiovascular diseases (16.33%), neurological diseases (12.24%), ENT diseases (11.22%), ophthalmology diseases (7.14%), cancer (7.14%), digestion disease (5.10%), metabolism disease (4.08%), blood and hematopoietic organs disease (4.08%), respiratory disease (3.06%), infection disease (1.02%), HIV (1.02%), the rest were other diseases (14.29%).

**Table 8:** Number of diseases detected in a person

Number of diseases detected in a person	n	Percentage
One disease	58	59.18%
Two diseases	8	8.16%
Three diseases	8	8.16%
Four diseases	8	8.16%
More than four diseases	4	4.06%
Without disease	12	12.24%
Total	98	100%

Group of people detected 1 disease, accounted for the highest rate of 59.18. Groups of people with 2 diseases, 3 diseases and more than 4 diseases all accounted for 8.16%, 4 diseases accounted for at least 4.06% and people without disease accounted for 12.24%.

## Discussion

### Classification by gender and age

In 98 cases were required for health assessment, male accounted for the majority with 82 cases (83.67%), female was less with 16 cases (16.33%). The results partly reflect the clear difference in social life activities between men and women in Vietnam. Men are more involved in criminal activities, working activities and have working accidents, etc., so it is related to a medical condition that requires examination at the request of relevant agencies.

Of the total 98 cases, the age group of 41 - 50 years old accounted for the highest proportion with 27.55%. The reason why in this study, the age group of 41 - 50 years old accounted for the highest proportion is because the number of assessed cases is a large number of workers who go for health assessment to determine whether they have an occupational disease in order to receive benefits of insurance due to working accidents, etc. This is a major force in working and daily life. Most of these people are main workers in society, so there is a possibility of collisions, fights, or diseases that require health assessment. Next is the group  $\leq 10$  years old, accounted for 24.49%, ranking second in this study, because many children from 1 to 5 years old were suspected of being transmitted disease during the phimosis dilation process by health worker. Age group 31-40 (19.39%), other groups accounted for a smaller proportion: 51-60 (12.24%); > 60 (9.18%); 21- 30 (5.10%); group of 11-20 accounted for a low rate of 5.10%.

### Classification by occupation

In this study, we found that the group of workers accounted for the highest proportion with 40.82% because there are many workers working at industrial factories with many machines, so they are exposed to noise pressure for many years, leading to the possibility of occupational deafness. Therefore, they are taken for assessment to determine occupational diseases, so that they may receive insurance benefits. And there are many cases where workers who have an accident at work go for an assessment to receive insurance benefits. The second group of pupils, they are children from 1 to 5 years old, accounted for 24.49%. These are cases of suspected infection during the phimosis dilation process by medical worker. The group of criminals (suspects) accounted for the third rate with 19.39%. These are cases where the patient has served a prison sentence and is being monitored for illness, so they should be sent for examination to determine the medical condition. They can be treated if the illness is so severe that they cannot serve the prison sentence, and if necessary, serving a prison sentence will endanger their lives. Some people sentenced to prison are on bail, people sentenced to prison have not yet served their prison sentences, and are temporarily suspended from serving their prison sentences due to serious illness. Self-employed group was 8.16%; Civil servant group was 4.08%; the farmer was lowest group with 2.04%.

### Reason for inspection

The research results in table 4 showed that, among the reasons requiring for health assessment: serving an investigation accounted for the highest rate of 59.18%. The reason is related to cases involving groups of workers suspected of faking occupational diseases to receive social insurance, so it needs to be investigated and verified. In addition, the group of children undergoing treatment for phimosis is suspected of transmitting the disease to the children by health worker, so it should be investigated to determine the responsibility of the person who spread the disease. Next is the group of health assessment to receive insurance benefits, which also accounted for a fairly high proportion, accounted for 19.39%. These are mainly cases of work accidents that require a health assessment to receive insurance benefits.

According to the provisions of Point a, Clause 1, Article 67 of the 2015 Penal Code in Vietnam, people sentenced to prison who are seriously ill can have their sentence postponed until their health is recovered<sup>[2]</sup>. Research results showed that the group of people had health assessments to postpone execution of sentences accounted for 13.27%, group of prisoners or criminals due to serious illness or health assessments while in detention need for treatment with 7.14%. These are also common cases in health assessment. Finally, the group related to other reasons accounted for the least with 1.02%.

### Requirement agencies for health assessment

The research results in table 5 showed that among the requirement agencies for health assessment, the investigation agency accounted for the highest solicitation rate of 57.14%. This is consistent with the reason for the assessment and the cause of the incident for the prosecution agency to resolve cases of suspicion of fake occupational diseases, cases of disease transmission, and cases of health impairment caused by others... Among the investigation agencies, we see that there are many cases requested by the investigation agency of the district police or many cases requested by the criminal judgment agency of the provincial police, requested by the Security Investigation Agency of the Ministry of Public Security. There is also a request from the Criminal Investigation Agency under the Ministry of National Defense. Agencies were prisons and courts both accounted for 4.08%, and the procuracy at least 3.06%. These agencies solicit expertise to resolve cases subject to expertise in cases that need to be postponed or temporarily suspended from serving prison sentences. In some cases, the Court decides to execute a prison sentence for the convicted person, but the subject requests to postpone the execution of the sentence on the grounds that he is currently suffering from certain illnesses. Many cases of people serving prison sentences in prisons were found to have serious illnesses through health checks, so they were taken for treatment and assessed to determine whether the prisoner's health status could continue serving the sentence or not. Other agencies were 31.63% include insurance agencies that require physical examination for accident victims to enjoy insurance benefits. They are mostly workers exporting foreign labor who have accidents after returned to Vietnam for treatment to be examined to receive compensation.

### Results determine disease status

The results of health assessment determined the people have disease accounted for 60.20%, people determined to have the disease but had stabilized treatment with 31.63%, and 8.16% of cases without disease. Thus, the rate of confirmed disease and the rate of disease confirmed but stable treatment was very high compared to cases without disease. This showed that the cases for assessment to determine health status are well-founded and the assessment results also identify disease and accurately conclude the health status of the subjects being examined.

In cases where the diagnosis is confirmed but treatment is stable, a high rate was cancer. In this study, we encountered a case of confirmed right superior mediastinal malignant neuroma that had undergone surgery and radiotherapy twice. At the time of assessment, the disease is temporarily stable, with no local recurrence or distant metastasis. According to regulations in Circular No. 03/2014/TT-BYT dated January 20, 2014 of the Ministry of Health, all diagnoses of cancer are serious diseases<sup>[5]</sup>. The defendant's illness was determined to be a serious illness but has been treated and is currently stable.

### Disease classification results

According to regulations in Vietnam, a person serving a prison sentence who is seriously ill is a person who is so ill that he or she cannot continue to serve the prison sentence and if he or she continues to serve the prison sentence, his or her life will be in danger. Therefore, it is necessary to temporarily suspend their imprisonment so that they can receive medical treatment. For example: end-stage cancer, cirrhosis of the liver, severe drug-resistant stage 4 tuberculosis, polio, heart failure stage 3 or higher, kidney failure stage 4 or higher, HIV transition to AIDS with ongoing infections association and poor prognosis, etc.<sup>[6]</sup>.

In this study, the classification of diseases and health-related problems according to the classification has been established by the World Health Organization<sup>[7]</sup>. The results of disease classification after the assessment conclusion showed that: Urological and genital diseases accounted for the largest number with 32.65%, followed by musculoskeletal diseases with 24.48%, cardiovascular diseases ranked third with 16.32%, neurological diseases 12.24%, ENT diseases 11.22%, ophthalmology diseases 7.14%, cancer 7.14%, other less common diseases such as digestion 5.10%, metabolism 4.08%, blood and organs hematopoietic 4.08%, respiratory 3.06%, infection disease 1.02%, HIV 1.02%, the rest were other diseases 14.29%.

Thus, the assessment results determined that the subjects suffered from many different and very diverse diseases. Urinary and genital diseases accounted for the highest proportion, because among the cases studied, there was a group of children who were assessed for being infected with genital warts during the treatment of phimosis. Musculoskeletal diseases and cardiovascular diseases also had quite high rates, often concentrated in the assessment people who are elderly and have chronic diseases. 11.22% had ENT disease, which is also a group of diseases with a fairly high rate, because in the group of assessed people, there were many cases of workers with occupational deafness and receiving insurance benefits, so they were taken to the forensic medicine institute for re-assessment to

accurately determine the occupational disease status. Cancer accounted for 7.14% of cases, usually in the group of criminals who were serving a prison sentence or have their prison sentence postponed, and are being sent for assessment for treatment on bail or postponing their sentence. Other groups of diseases were often diseases combined with the main disease such as metabolic diseases, respiratory diseases, infections, detected during assessment.

### Number of diseases suffered in one case

People were found to have one disease with highest rate of 59.18%, groups of two diseases, three diseases and more than four diseases all accounted for 8.16%; four diseases accounted for at least 4.06%. The group of people for assessment had one disease with the highest proportion, usually the main disease and serious disease that needs to be assessed to determine the health status and rate of health impairment to resolve the case or incident. Groups with two or three diseases, even more than four diseases are common diseases combined with the main disease detected during health assessment. There were 13.24% of cases without disease. It could be concluded that after the health assessment, it will help the solicitation agency resolve cases accurately, objectively, and comply with the law.

### Conclusion

Research results on 98 cases required for health assessment showed that: The group age of 41 - 50 years old accounted for the highest proportion with 27.55%; health assessment for investigation accounted for the highest rate of 59.18%; the results of the assessment confirmed the presence of disease accounted for 60.20%, disease but had stabilized treatment with 31.63% and without disease 8.16%; among the group of disease, urinary and genital diseases accounted for the largest number with 32.65%, followed by musculoskeletal diseases with 24.48%, cardiovascular diseases with 16.32%,...; the group of people with one disease accounted for the highest rate with 59.18%, the remaining were cases with many combined diseases.

### Acknowledgments

We thank the National institute of forensic medicine, Vietnam for funding this study.

### Conflict of Interest

Not available

### Financial Support

Not available

### References

1. Vietnam Penal Code; c2015.
2. Forensic medicine. Department of Forensic Medicine - Hanoi Medical University. Medical Publishing House; c2002.
3. Circular No. 47/2013/TT-BYT dated December 31, 2013 of the Ministry of Health, Vietnam.
4. Circular No. 13/2022/TT-BYT dated November 30, 2022 of the Ministry of Health, Vietnam.
5. Circular No. 03/2014/TT-BYT dated January 20, 2014 of the Ministry of Health, Vietnam.
6. Joint Circular No. 02/2006/TTLT-BCA-BQP-BYT-

TANDTC-VKSNDTC dated May 18, 2006, Vietnam.

7. World Health Organization. International statistical classification of diseases and related health problems, 10th revision, Fifth edition; c2016.

**How to Cite This Article**

Nhu ND, Diem DH. Characteristics of cases required for health assessment at the National institute of forensic medicine in the years 2014-2023. International Journal of Forensic Medicine. 2024;6(1):13-17.

**Creative Commons (CC) License**

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.