

# The Retention Rate of Emergency Department in Taiwan - A four-year Tendency in Emergency Medical Service System

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## Background

In order to delivery and rescue severe patients with specific diseases to appropriate hospitals in prime time, Taiwan government fostered the policy and implemented Emergency Medical Service System (EMS) Program since 2009. The EMS set the criteria of each indicator on the basis of diseases to encompass the needs of the majority patients and enhance the quality of hospitals. However, the congestion problem tends to be a common phenomenon in the emergency department (ED). The percentage of emergency patients observed or waited for hospitalization over 24/48 hours is high in the recent year, the severe level hospitals especially (Figure 1 and 2). It resulted in the increase of time for waiting an inpatient bed in ED, delay of medical care time, and even affect the quality of health care and patient safety. In view of this, to deal with the problem of emergency congestion, the government set the aim of the indicators by phases in 2015. The aims are as follows: the retention rate of emergency patients observed or wait for hospitalization over 48 hours less than7% in 2015, less than 4% in 2016, and after 2017 years is 0 or less than the average of the peer. The objective of this study is to investigate the influence of EMS policy and the improvement of ED congestion among medical centers in Taiwan.

Figure 1.Tendency of the emergency patients observed or waited for hospitalization over 24 hours in 2009-2014.

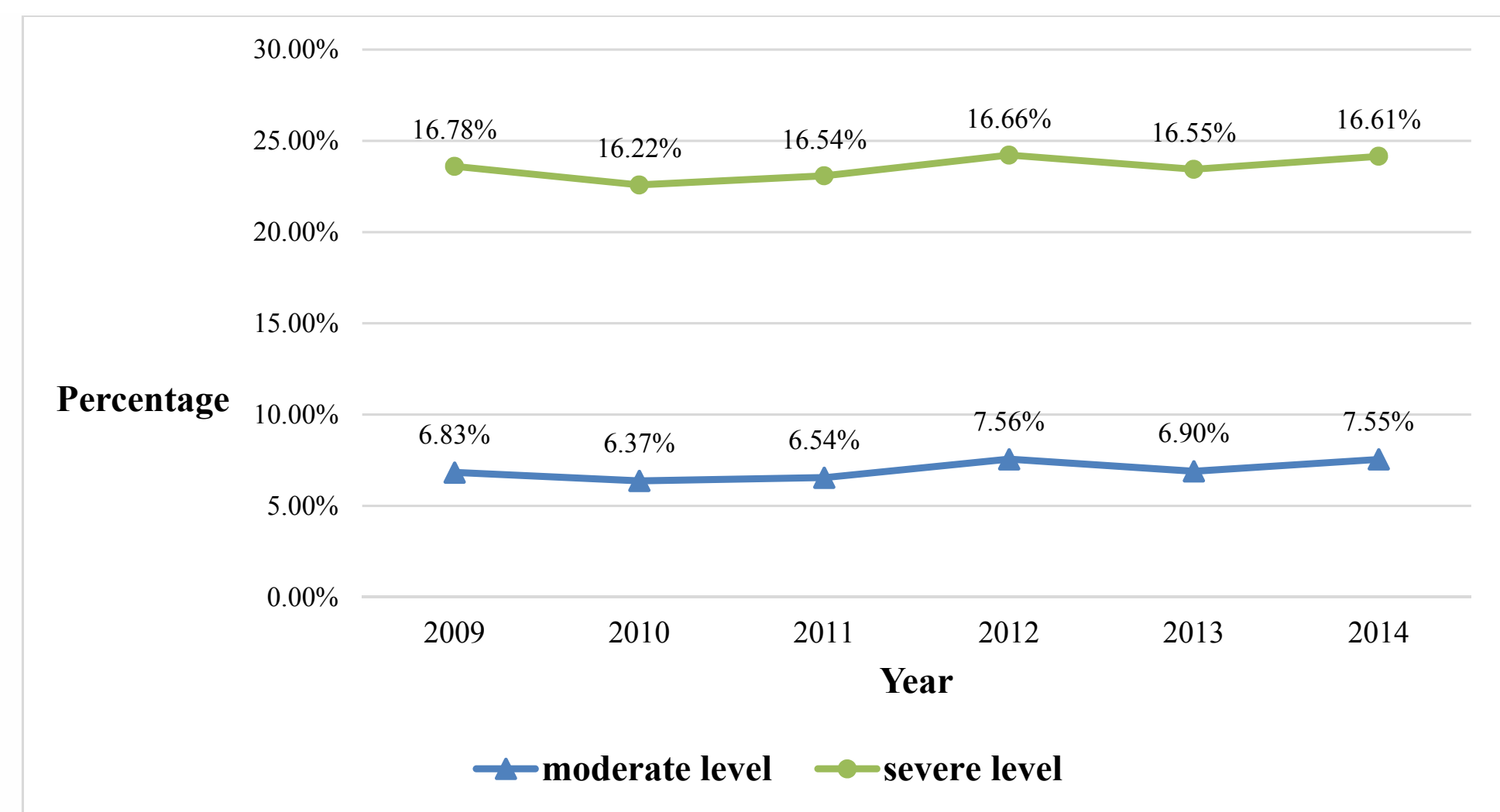
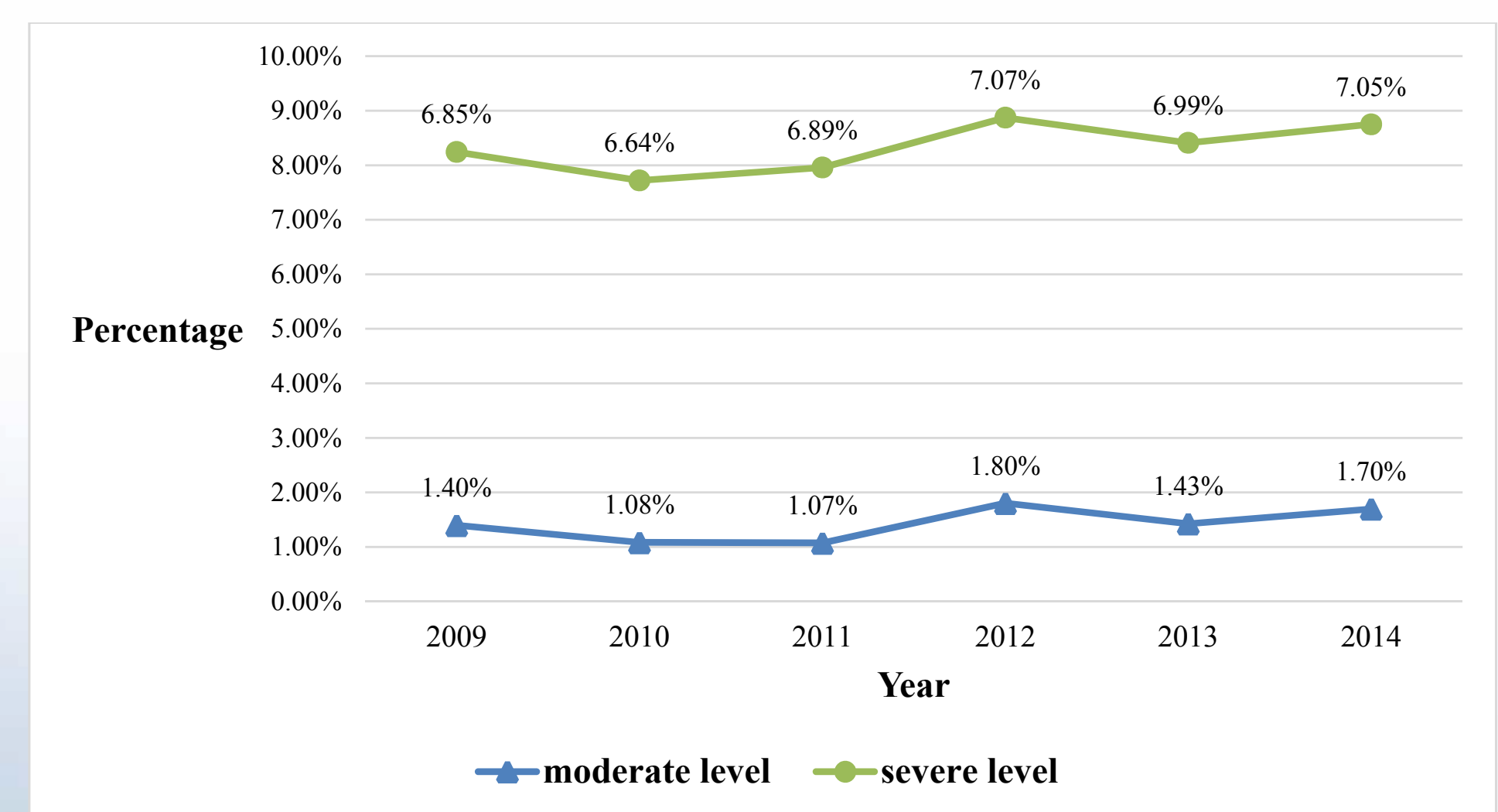


Figure 2.Tendency of the emergency patients observed or waited for hospitalization over 48 hours in 2009-2014.



## Methodology

The capacity of EMS participating hospitals determined by the emergency services, human resources, facilities provided and the evaluation results. According to the EMS system, hospitals divided into three levels, such as severe level, moderate level, and general level. The process begins with an on-site survey that assesses compliance with EMS standards, which are conducted by 4 to 6 surveyors in 4 hours with a 4-year evaluation cycle. This study used the data from the National Health Insurance Database in Taiwan from 2012 to 2015. The calculation of retention is "discharge of ED time" minus "enter the ED time" minute (per unit in minute):

1. The tendency of the emergency patients observed or waiting time for hospitalization over 24 hours: Retention Time is more than 1440 minutes (24hr\*60 min=1440 min).
2. The tendency of the emergency patients observed or waiting time for hospitalization over 48 hours: Retention Time is more than 2880 minutes (2\*24hr \*60 min =2880 min).

## Results

According to these findings from 2012 to 2015, after Taiwan government set the aim of the retention rate by phases in 2015, the nineteen severe level hospitals began improving the time-to-observed goals of emergency patients.

1. Percentage of the emergency patients waited for hospitalization over 24 hours was decreased from 23.1% to 22.4% (Figure 3).
2. Percentage of the emergency patients waited for hospitalization over 48 hours was decreased from 10.7% to 7.9% (Figure 3).
3. Percentage of the patients observed in emergency room over 24 hours was decreased from 7.4% to 7.1% (Figure 4).
4. Percentage of the patients observed in emergency room over 48 hours was decreased from 3.3% to 2.5% (Figure 4).

Figure 3.Tendency of the emergency patients waited for hospitalization over 24 and 48 hours in 2012-2015.

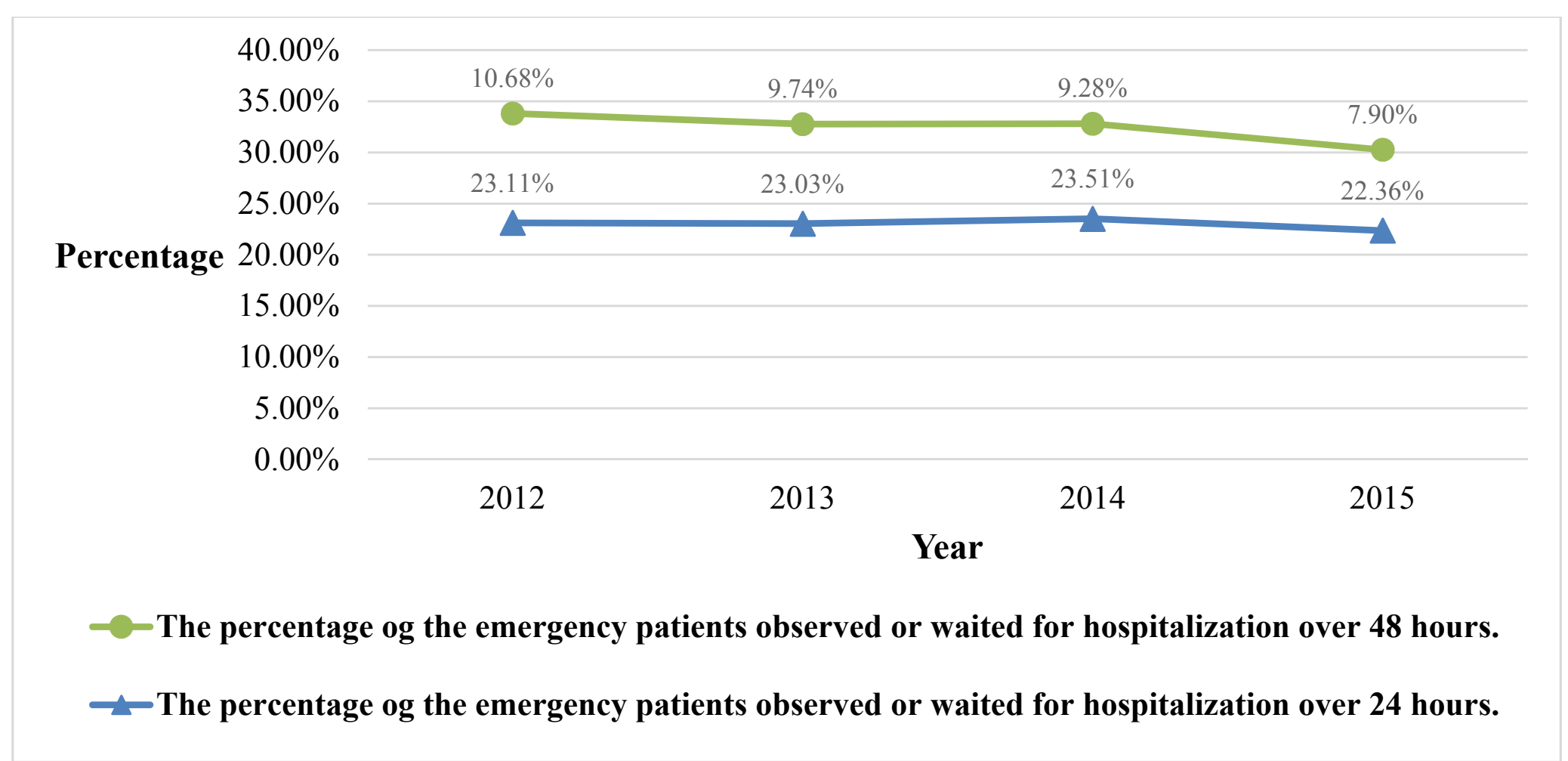
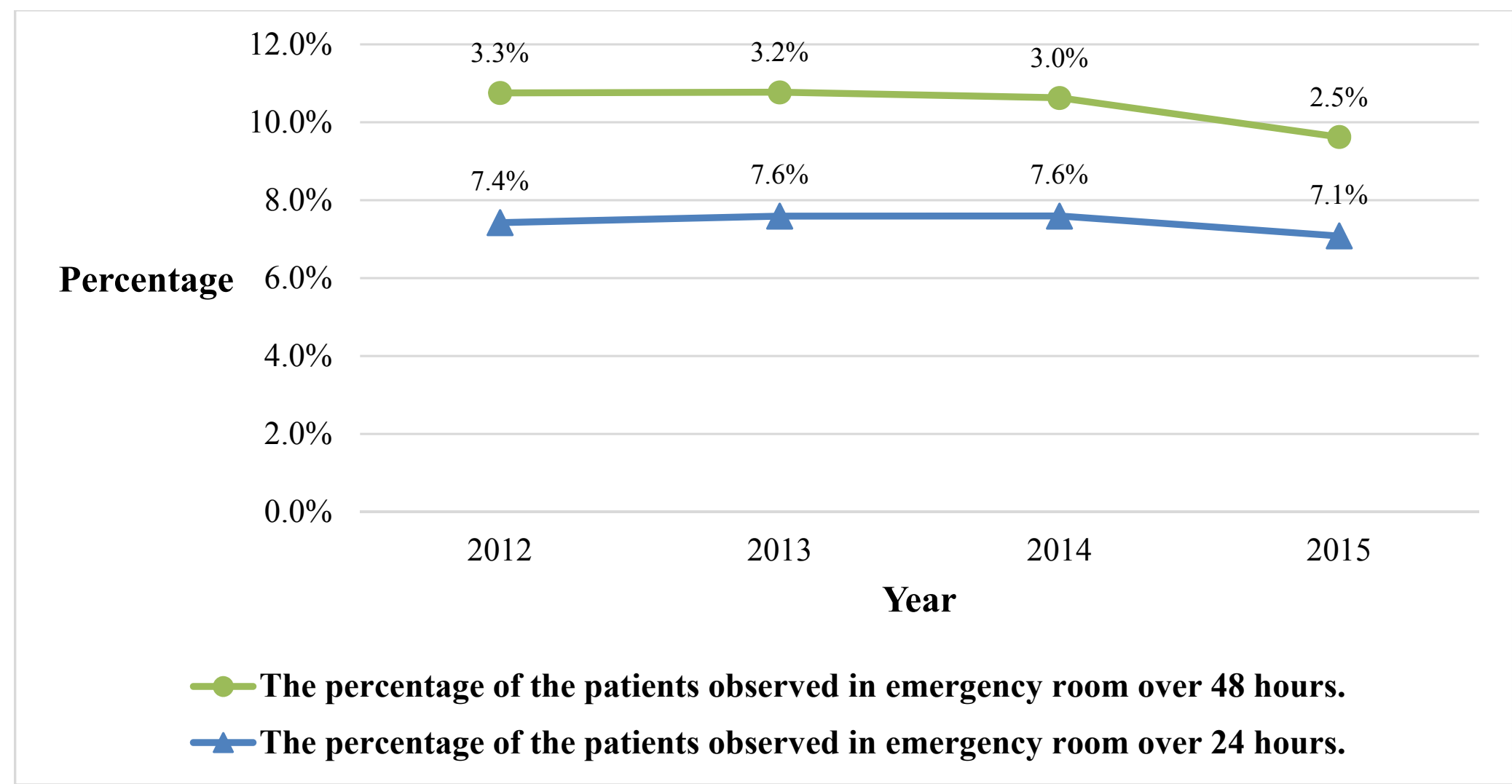


Figure 4.Tendency of the emergency patients observed in emergency room over 24 and 48 hours in 2012-2015.



## Conclusion

With the intervention of EMS program and indicators established, the congestion problem in the ED has improved. Through the tendency of the analysis, the findings will provide to the Taiwan government, experts and associations to execute the policies, and even meliorate the emergency patients' quality of care and prognosis of patients.

## Acknowledgement

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**Keywords:** Emergency Medical Service system (EMS), Retention Rate, external evaluation