

# Overview the Reasons for Termination of CPR, and Prevalence of Do-Not-Resuscitate in Taiwan

E. H. Yeh<sup>1</sup>, S. Y. WU<sup>1</sup>, H. H. Liao<sup>2</sup>, P. C. Wang<sup>3</sup>

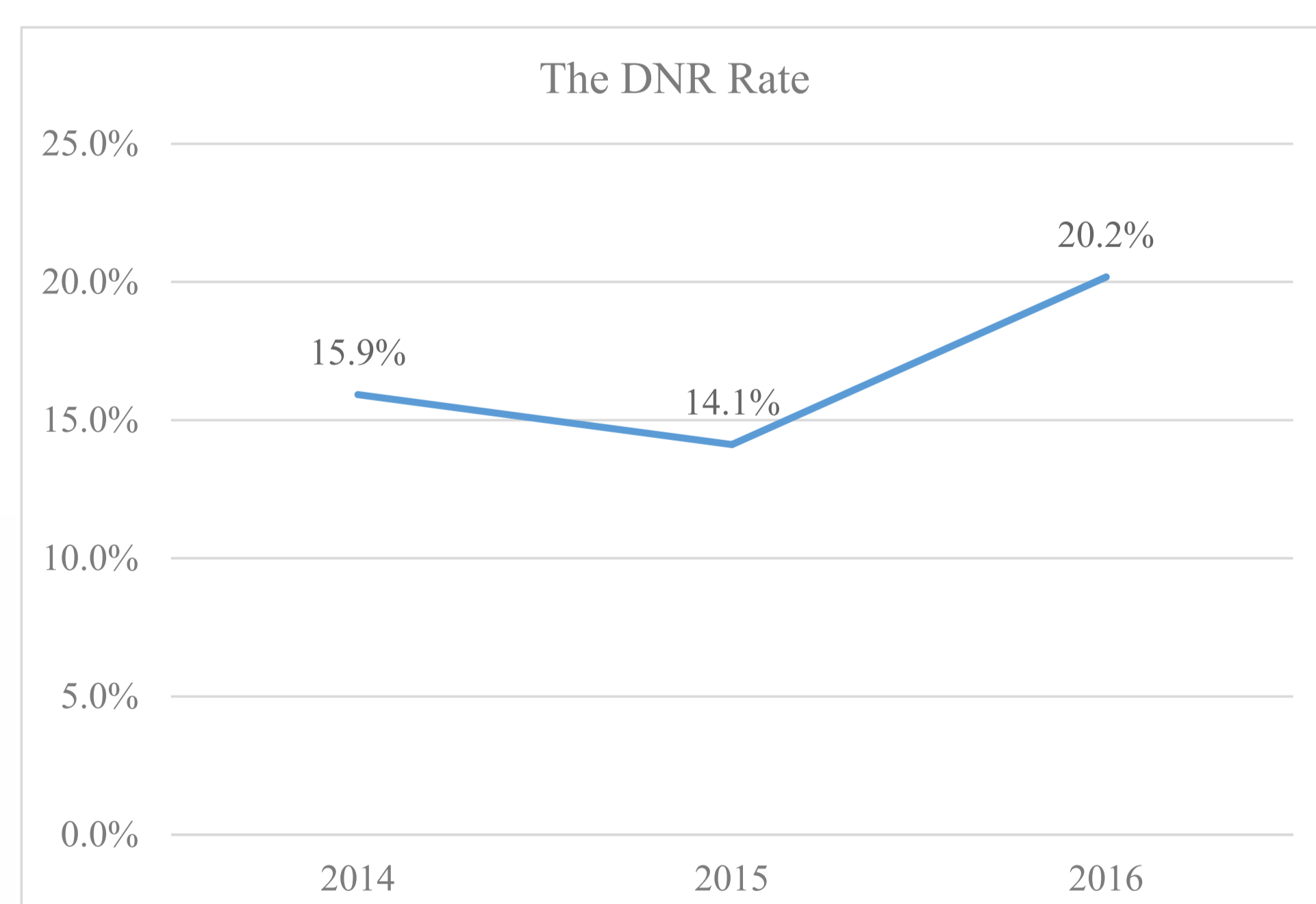
<sup>1</sup>Division of Quality Improvement, <sup>2</sup>Deputy Chief Executive Officer,

<sup>3</sup>Chief Executive Officer, Joint Commission of Taiwan, New Taipei City, Taiwan

## Introduction

The Hospice Palliative Care Act was passed in Taiwan since 2000. It is expected to enhance the quality of care, avoid futile therapy and unnecessary suffering for dying patients through the signature of do-not-resuscitate (DNR). The aim of this study was to investigate the characteristic of Do-not-resuscitate (DNR) in Taiwan.

	Expired without DNR (n= 1,314)		with DNR Permit (n= 568)		ROSC (n=1,563)		p-value
	$\bar{x}$ n	(SD) %	$\bar{x}$ n	(SD) %	$\bar{x}$ n	(SD) %	
Age	66.2	20.0	69.5	19.6	65	21.5	<.001
Sex							.104
male	839	63.9	330	58.1	973	62.3	
female	436	33.2	224	39.4	554	35.4	
unknown	18	1.4	5	0.9	16	1.0	
Site							<.001
ICU	447	34.0	219	38.6	566	36.2	
general wards	411	31.3	214	37.7	504	32.2	
ED	300	22.8	97	17.1	291	18.6	
Examination Room	97	7.4	21	3.7	150	9.6	
OR	20	1.5	-	-	16	1.0	
OPD	3	0.2	-	-	6	0.4	
POR	1	0.1	-	-	0	0.0	
Others	28	2.1	15	2.6	23	1.5	



## Results

This database comes from 20 hospitals, there were 3,445 IHCA patients who experiencing cardiopulmonary resuscitation (CPR). According to the reason for the termination of CPR, these IHCA patients could classify into 3 groups, including patients expired without DNR (n= 1,314, 38.1%), with DNR permit (n= 568, 16.5%), and return of spontaneous circulation (ROSC) (n=1,563, 45.3%). Characteristic such as age, sex, IHCA site of these 3 groups patients were analyzed. The mean age of patients expired without DNR was 66.2 (SD = 20.0), with DNR permit was 69.5 (SD = 19.6) and ROSC was 65 years (SD = 21.5). Age were statistically significant differences among the 3 groups (p < 0.001). Among sexes, patients who expired without DNR, signing DNR, and ROSC were predominantly male (63.9%, n = 839; 58.1%, n = 330; 62.3%, n = 973), and there were no statistically significant (p = .104). No matter which group, there was statistically significant differences in IHCA site (p < 0.001). The most often site was intensive care units (34%, n=447; 38.6%, n= 219; 36.2%, n= 566, respectively), followed by general wards (31.3%, n=411; 37.7%, n= 214 ; 32.2%, n= 504).

While looking into the second group that stopped resuscitation because of DNR permit, hospital level and area differences in Taiwan were analyze further. At the hospital level, medical center had highest DNR rate (16.7%), followed by regional hospitals (16.1%). By regional differences, the DNR rate of the northern Taiwan hospitals, the central Taiwan hospitals, and the southern hospitals, was 16.7%, 20.1%, 14.1%.

Inspecting the DNR rate year by year from 2014 to 2016, it raised from 15.9%, to 20.2%. In medical centers, it showed a dramatically increased from 12.1% (2014) to 23.8% (2016). The central Taiwan hospital, increased in each year (11.0% vs 16.8% vs 29.0%), but the southern hospital decreased from 16.8% (2014) to 13.3% (2016).

## Methods

A retrospective study was conducted in the Taiwan Clinical Performance Indicator (TCPI) In-Hospital Cardiac Arrest (IHCA) Database from 2014 to 2016. Unadjusted analysis was used to identify the clinical characteristic and hospital characteristic of in-hospital cardiac arrest patients.

## Conclusion

The most reason for the termination of CPR was ROSC. The prevalence of DNR rate seems to be rising in generally, but prevalence of DNR rate among the southern Taiwan hospitals decreased. It still need further study to understand the factors influence the DNR rate.

**Keywords:** Do-not-resuscitate (DNR), in-hospital cardiac arrest (IHCA), cardiopulmonary resuscitation (CPR), Taiwan Clinical Performance Indicator (TCPI), spontaneous circulation (ROSC)

