

# MEDICAL DEVELOPMENT DIVISION

## MalaysianDRG FINDINGS : 2017 & 2018

### INTRODUCTION

Malaysian Diagnosis-Related Groups (MalaysianDRG) is the name of casemix used by Ministry of Health Malaysia hospitals. It is designed specifically to provide healthcare costing information for health managers and policymakers. MalaysianDRG uses a method of grouping every episode of health care based on clinical information and the resources consumed. It generates information that is useful for efficient and equitable allocation of resources.

### OBJECTIVES

#### EFFICIENT ALLOCATION OF RESOURCES

- Tool for policy maker (decision making) for allocation/ monitor resources at Ministry, States, Clusters/Hospitals level

#### QUALITY PROFILING

- Tool to compare and benchmark quality/performance of healthcare service & monitor the effectiveness of the services

### SUGGESTED CITATION:

Medical Development Division, Ministry of Health 2020. MalaysianDRG 2017 and 2018: National Base Rate, Demographic and Quality Indicator - Key Findings

# MalaysianDRG Framework

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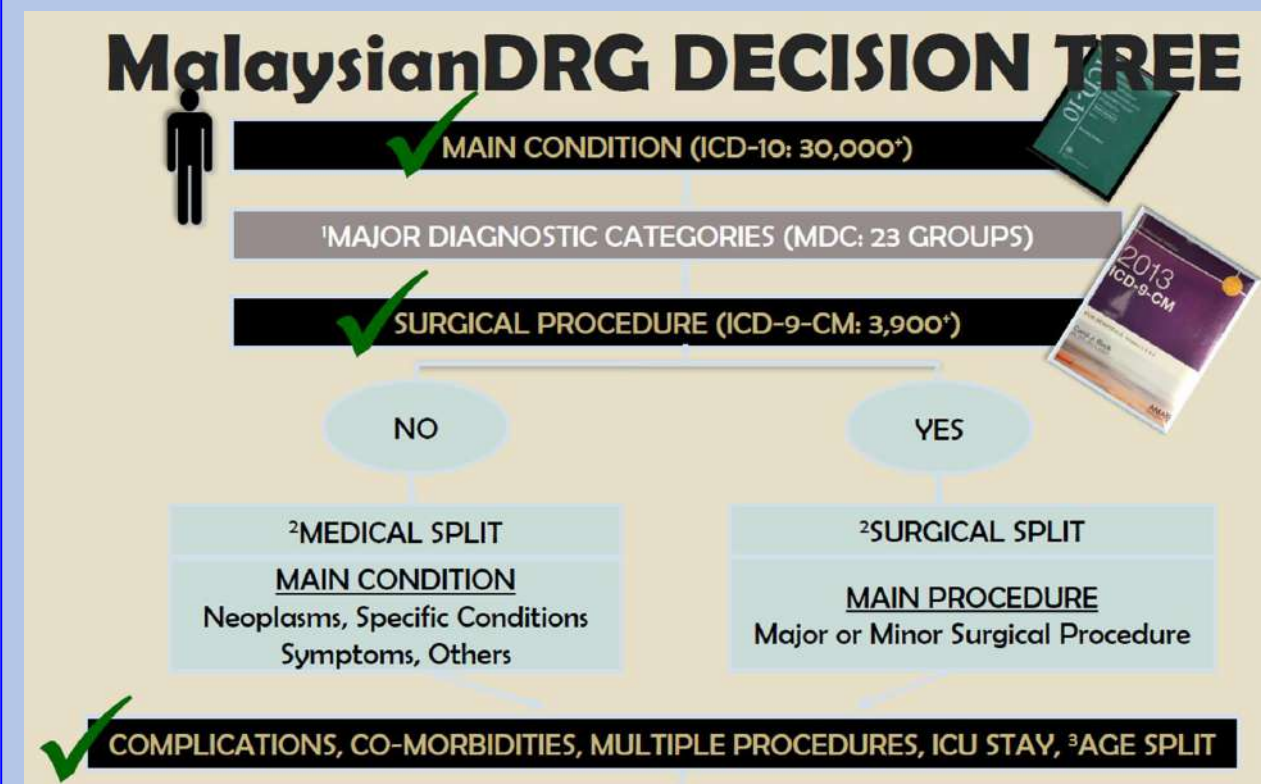
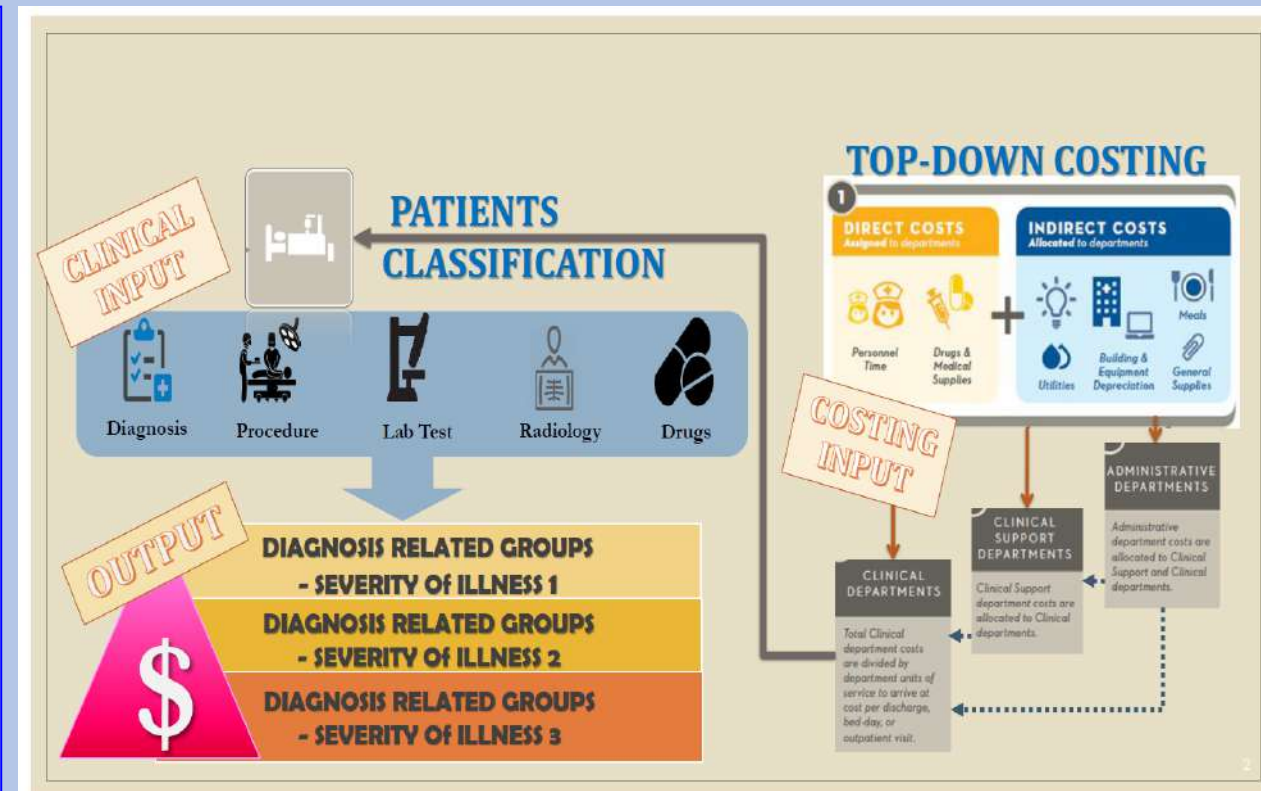
### FINDINGS DISCLAIMER:

The views expressed in this info brief are those of the authors alone and do not necessarily represent the opinions of the other investigators participating in the survey, nor the view or policy of the Ministry of Health.

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Casemix Subunit

Medical Services & Management Unit, Medical Development Division

Level 2, Block E1, Federal Government Administrative Office, MINISTRY OF HEALTH, MALAYSIA

# Key Findings: 2017 & 2018

- CASEMIX HOSPITALS IN 2017 & 2018
- HOSPITAL EXPENDITURE, OUTPUT & BASE RATE
- IN-PATIENT BASE RATE
- DAYCARE, SPECIALIST OUTPATIENT CLINIC, OUTPATIENT DEPARTMENT & EMERGENCY & TRAUMA DEPARTMENT BASE RATE
- DEMOGRAPHIC DISTRIBUTION
- DISCHARGE OUTCOME
- DEPARTMENT DISCHARGE
- SOURCE OF REFERRAL
- LENGTH OF STAY BY HOSPITAL CATEGORY
- TOP 10 MAIN DIAGNOSIS BASED ON SEVERITY OF ILLNESS -1 (SOI 1)
- TOP 10 PROCEDURES
- AVERAGE LENGTH OF STAY BY SOI
- CASEMIX INDEX BY TYPES OF HOSPITAL
- HISTORICAL BUDGET VS MALAYSIANDRG REIMBURSEMENT

**2017**



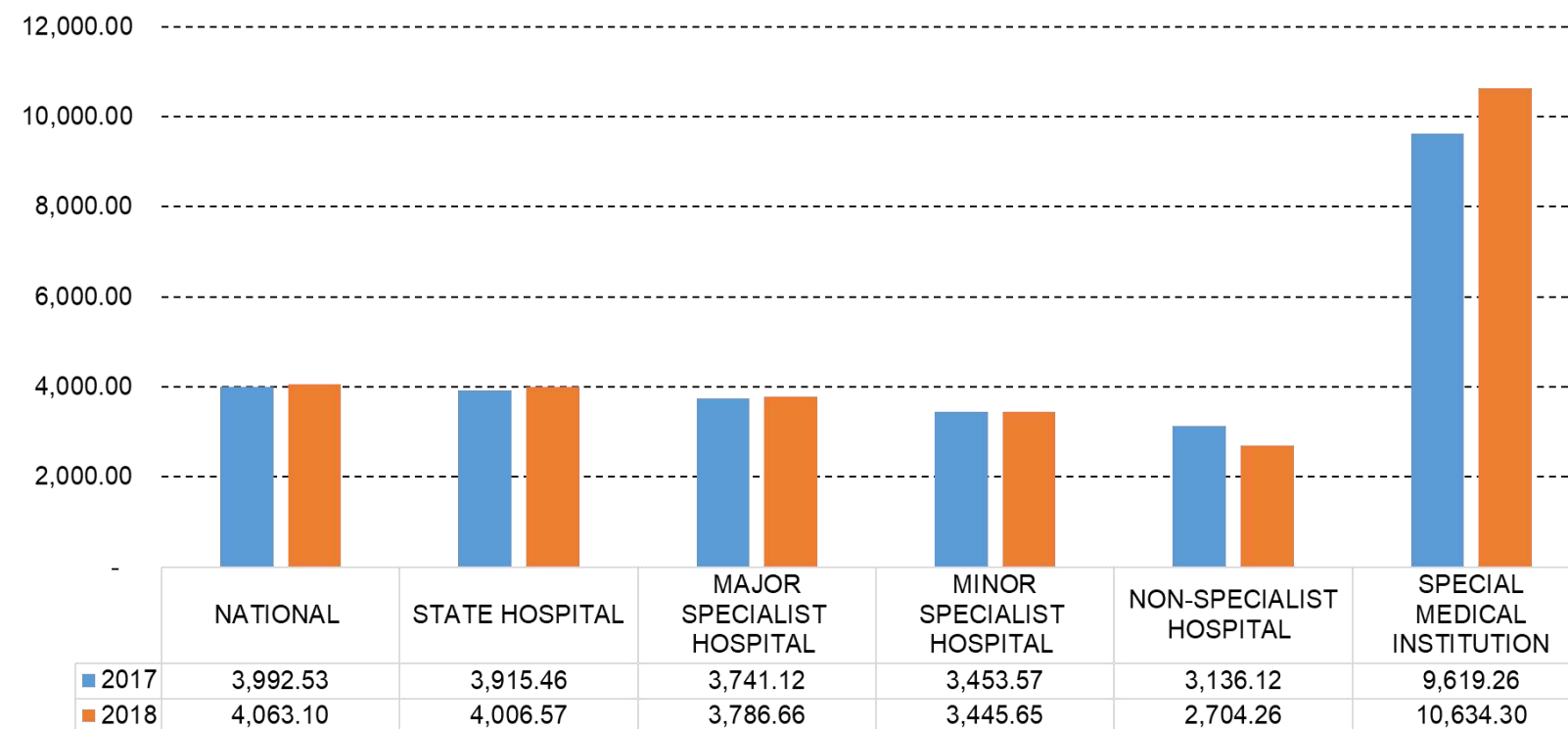
- 38 hospitals (26% of total KKM hospitals)
- 13 State Hospitals
- 6 Major specialist Hospitals
- 4 Minor Specialist Hospitals
- 13 Non-specialist Hospitals
- 2 Special Medical Institutions
- 1,322,997 discharges (51.44% of total KKM hospitals discharges)

**2018**



- 50 hospitals (34% of total KKM hospitals)
- 13 State Hospitals
- 8 Major specialist Hospitals
- 5 Minor Specialist Hospitals
- 22 Non-specialist Hospitals
- 2 Special Medical Institutions
- 1,375,552 discharges (53.08% of total KKM hospitals discharges)

**In-Patient Base Rate (RM) 2017 & 2018**



- **National:**  
**+ 1.7%**
- **State Hosp:**  
**+2.3%**
- **Major Specialist:**  
**+1.2**
- **Minor Specialist:**  
**-0.2%**
- **Non-Specialist:**  
**-13.8%**
- **Specialist Medical Institutions:**  
**+10.6%**

**2017**

**Daycare, SOPC, OPD & ETD - Encounters and Base Rate 2017 & 2018**

**2018**

HOSPITAL CATEGORY	Daycare		Specialist Out Patient Clinic (SOPC)		Out Patient Department (OPD)		Emergency and Trauma Department (ETD)	
	%	Base rate (RM)	%	Base rate (RM)	%	Base rate (RM)	%	Base rate (RM)
<b>NATIONAL (145)</b>	<b>7.21</b>	<b>705.87</b>	<b>19.4</b>	<b>320.52</b>	<b>5.1</b>	<b>48.48</b>	<b>5.00</b>	<b>94.81</b>
State hospital (13)	7.58	1,096.21	18.7	319.37	5.1	35.01	5.00	158.15
Major specialist hospital (6)	6.95	929.20	17.0	345.21	5.1	-	5.00	101.44
Minor specialist hospital (4)	8.70	852.41	19.9	343.29	5.1	6.99	5.00	59.90
Non-specialist hospital (13)	6.28	372.07	30.5	1,786.11	5.1	6.64	5.00	39.36
Special medical institution (2)	4.55	351.45	22.9	825.44	5.1	-	5.00	570.33

HOSPITAL CATEGORY	Daycare		Specialist Out Patient Clinic (SOPC)		Out Patient Department (OPD)		Emergency and Trauma Department (ETD)	
	%	Base rate (RM)	%	Base rate (RM)	%	Base rate (RM)	%	Base rate (RM)
<b>NATIONAL (145)</b>	<b>7.24</b>	<b>713.44</b>	<b>19.5</b>	<b>331.60</b>	<b>4.93</b>	<b>50.86</b>	<b>5.00</b>	<b>100.61</b>
State hospital (13)	7.52	1,086.81	18.8	320.94	4.93	35.49	5.00	165.59
Major specialist hospital (6)	6.94	1,016.11	17.1	331.34	4.93	-	5.00	105.54
Minor specialist hospital (4)	6.23	693.14	22.4	379.17	4.93	6.99	5.00	57.14
Non-specialist hospital (13)	6.75	302.38	30.2	1,590.30	4.93	7.29	5.00	38.13
Special medical institution (2)	4.53	406.43	23.0	863.14	4.93	-	5.00	592.18



**Casemix Subunit**

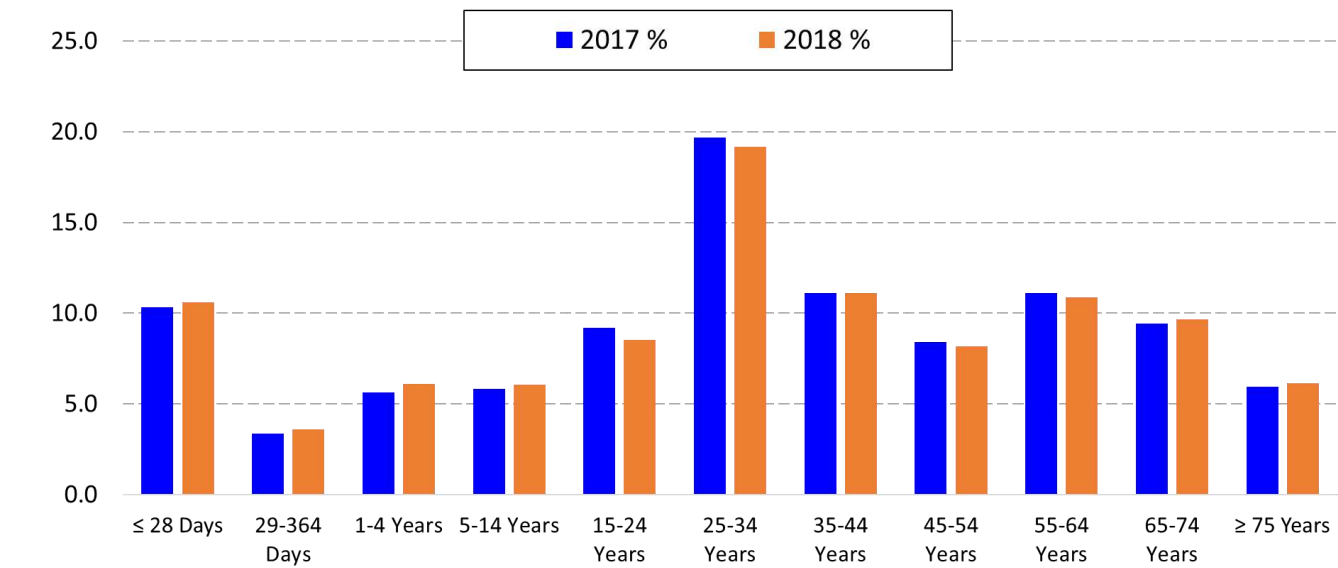
**Medical Services & Management Unit, Medical Development Division**

**Level 2, Block E1, Federal Government Administrative Office, MINISTRY OF HEALTH, MALAYSIA**

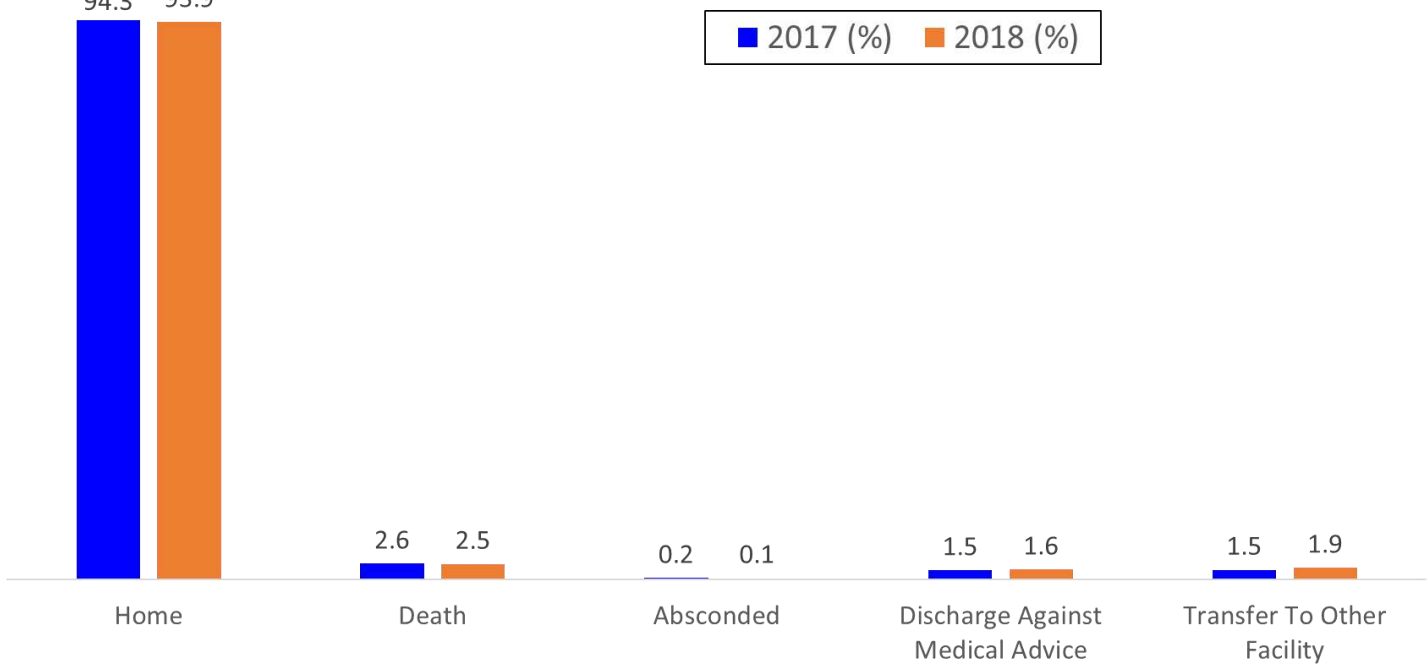


# Key Findings: 2017 & 2018

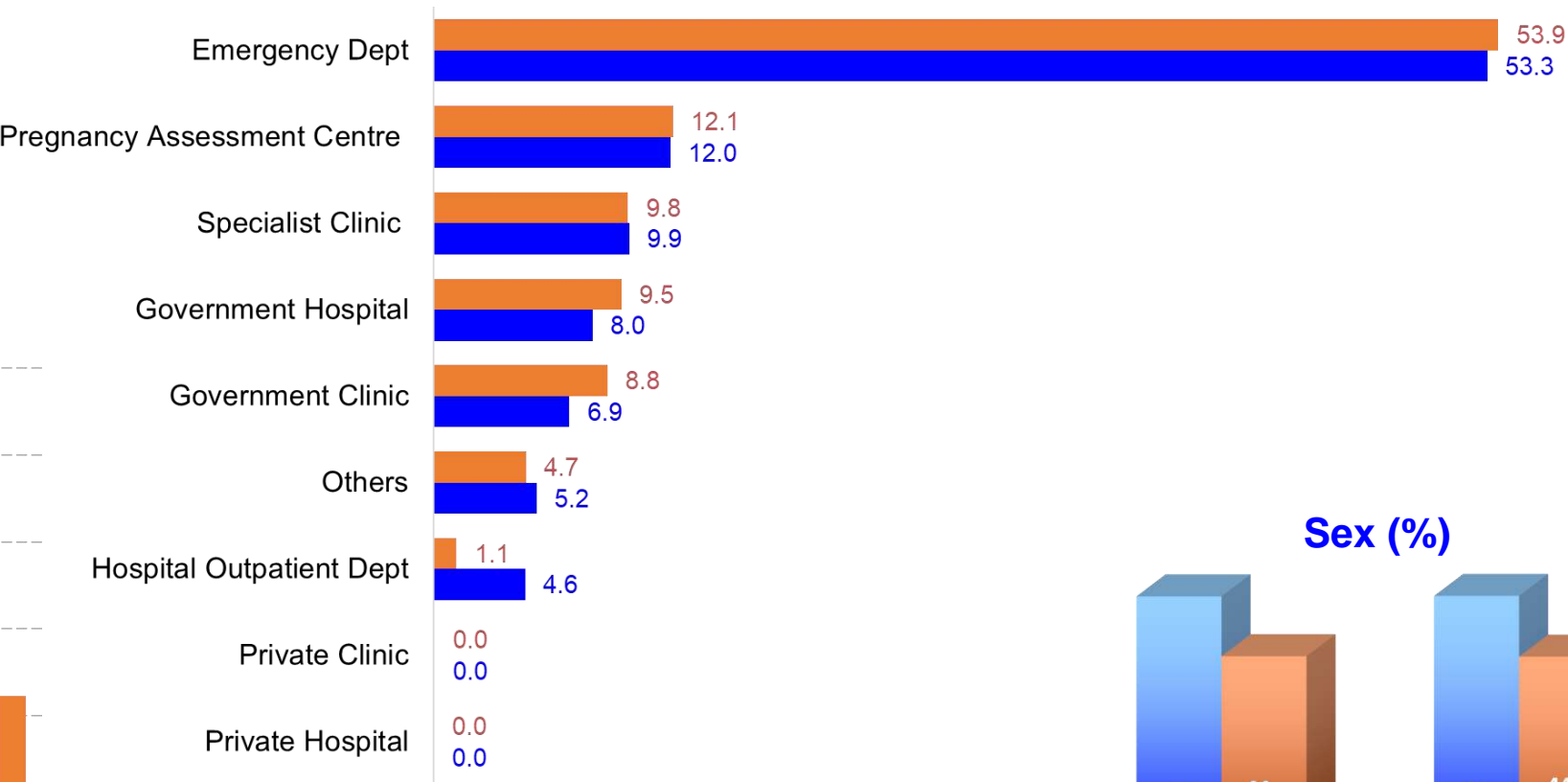
Age distribution (%)



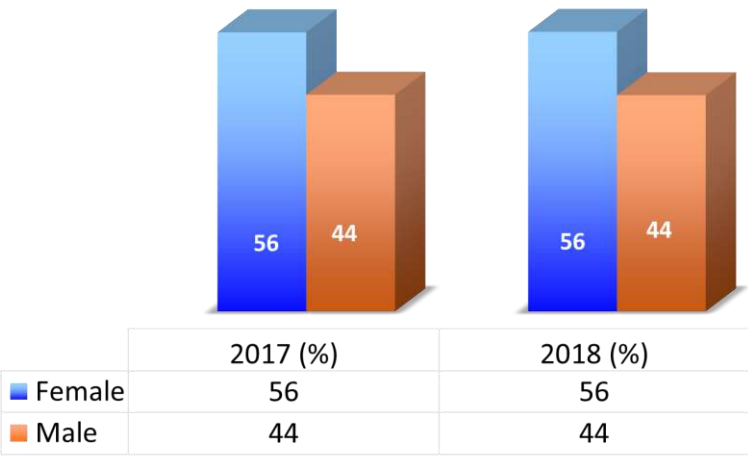
Discharge Outcome (%)



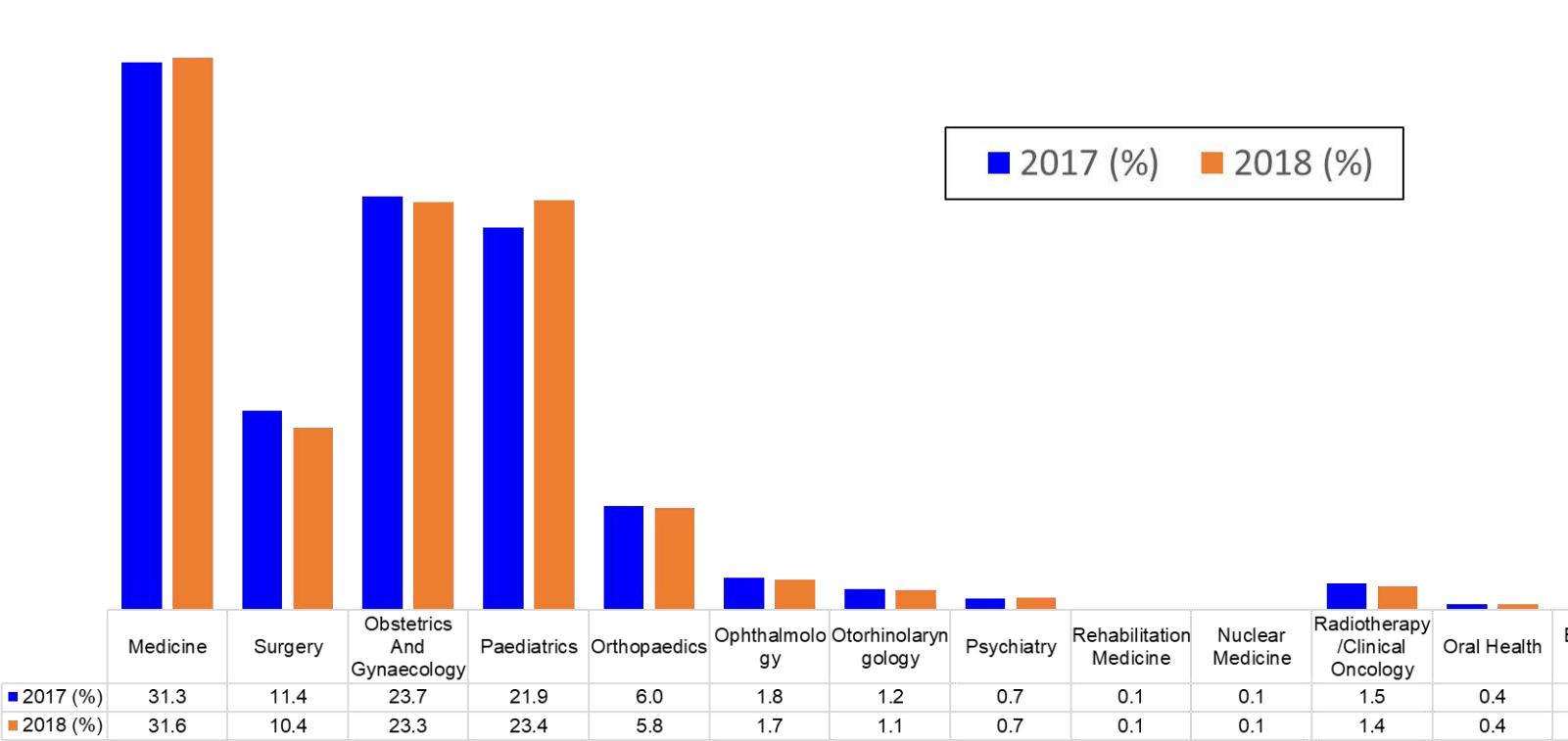
Source of Referral (%)



Sex (%)



Department Discharge (%)



# Key Findings: 2017 & 2018

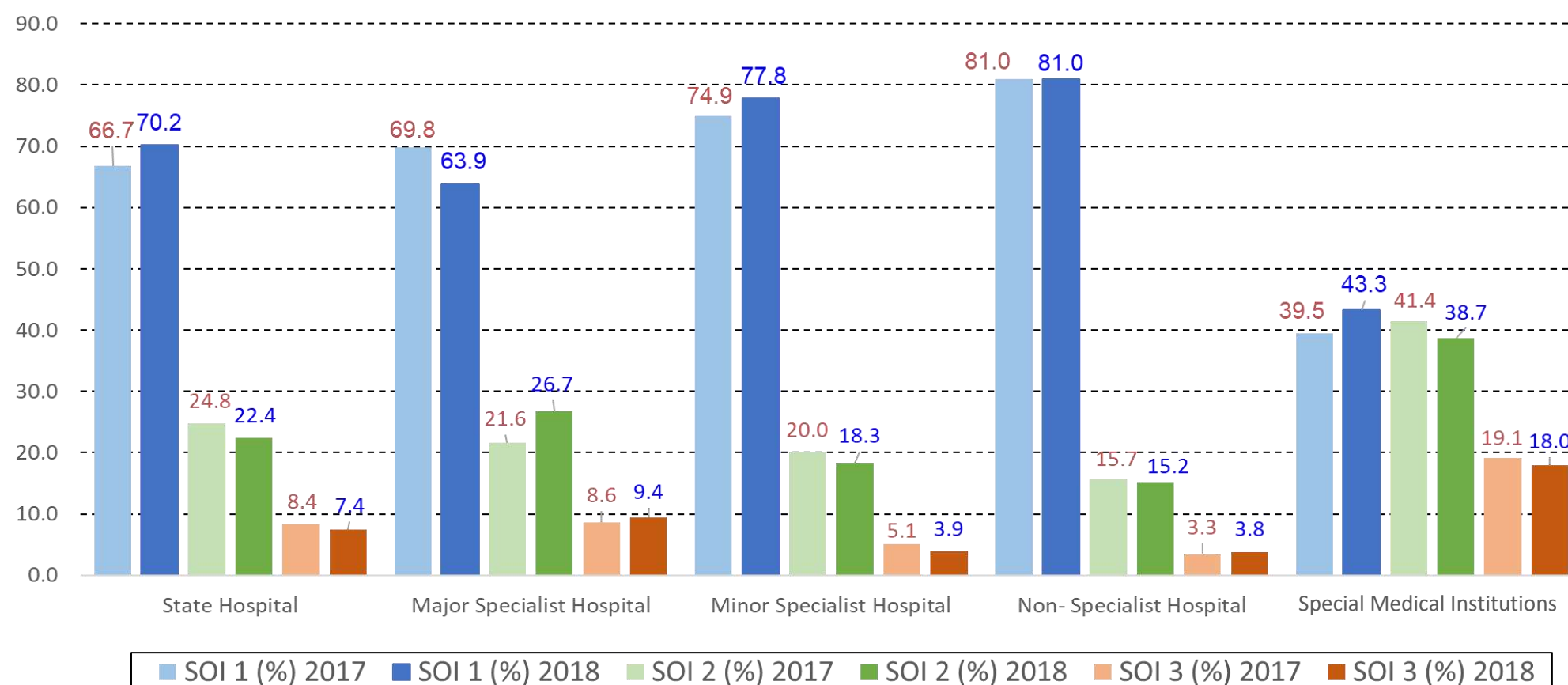
Length of Stay (LOS) by Hospital Category

Location	2017			2018		
	Median	Mean	CI (95%)	Median	Mean	CI (95%)
Special Medical Institution	4	6.6	6.4 - 6.7	4	6.7	6.6 - 6.9
State Hospital	3	5.2	5.2 - 5.3	3	5.3	5.3 - 5.4
Major Specialist Hospital	3	4.8	4.7 - 4.9	3	4.7	4.7 - 4.7
Minor Specialist Hospital	3	4.3	3.7 - 4.9	3	3.9	3.9 - 4.0
Non-Specialist Hospital	3	3.9	3.8 - 4.1	3	3.8	3.8 - 3.9

Average Length of Stay (ALOS) by Severity of Illness (SOI) – 2017 & 2018

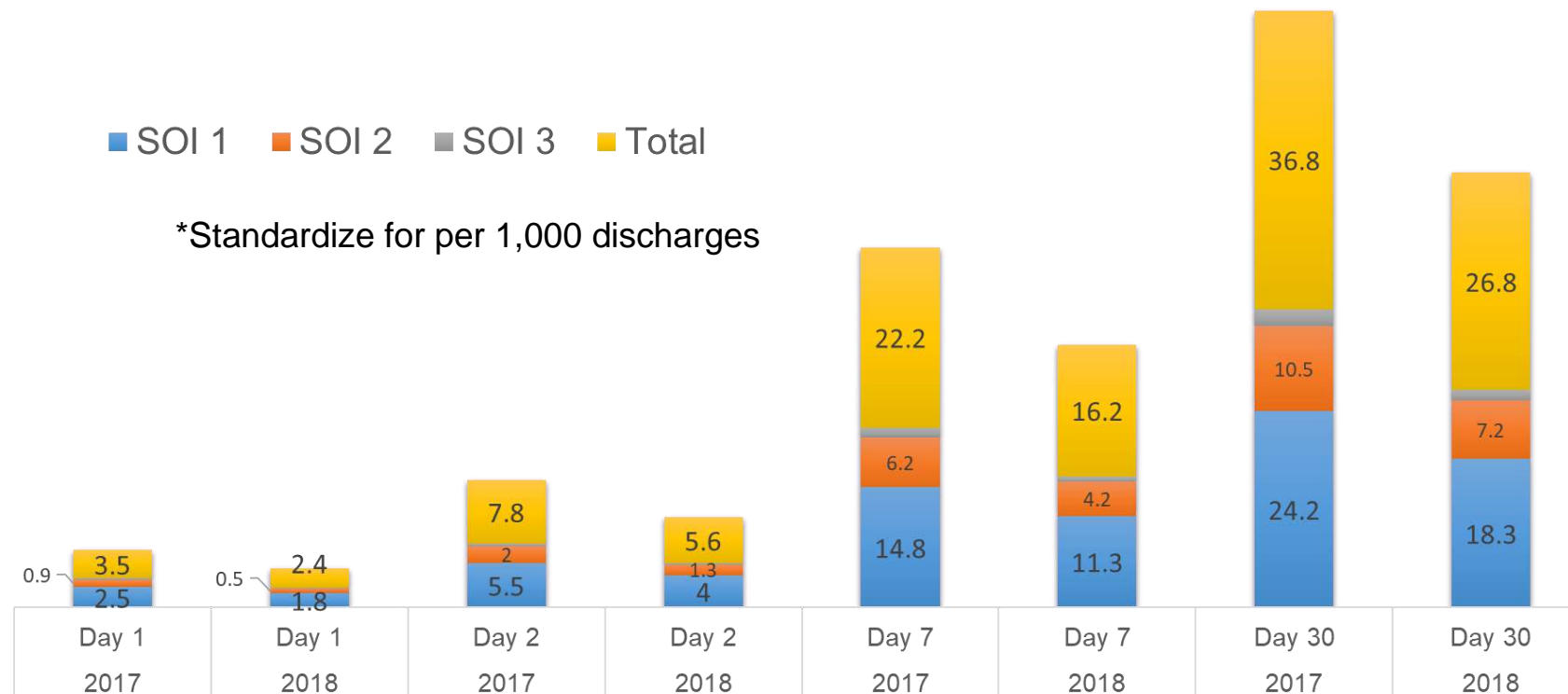
Severity of Illness	2017		2018	
	%	ALOS	%	ALOS
<b>SOI 1</b>	69.83	3.4	68.7	3.2
<b>SOI 2</b>	22.67	4.9	23.4	4.7
<b>SOI 3</b>	7.50	8.9	8.0	8.9

Severity of Illness (SOI) based on Type of Hospital – 2017- 2018



# Key Findings: 2017 & 2018

## Readmission by Severity of Illness: 2017 & 2018



## Death According to Severity of Illness: 2017 & 2018

Severity of Illness	2017		2018	
	No. Death Cases	%	No. Death Cases	%
SOI 1	10,471	30.7	10,895	28.37
SOI 2	9,673	28.36	10,576	27.54
SOI 3	13,968	40.95	16,932	44.09
Total	34,112	100	38,403	100

2017

## Mortality based on Cause of Death: 2017 & 2018

2018

No.	Code	Direct Cause of Death	No. Cases	%	LOS		
					Mean	Median	2SD
1	A41.9	Sepsis, Unspecified	7,864	23	9.62	4	33.25
2	J18.9	Pneumonia, Unspecified	2,499	7	9.19	4	33.15
3	I24.9	Acute Ischaemic Heart Disease, Unspecified	1,133	3	7.85	3	95.61
4	R57.2	Septic Shock	918	3	8.13	3	25.69
5	R57.0	Cardiogenic Shock	845	2	4.73	2	15.76
6	J69.0	Pneumonitis due to Food and Vomit	806	2	5.75	3	15.23
7	C34.9	Malignant Neoplasm Bronchus or Lung, Unspecified	654	2	8.58	5	22.06
8	I64	Stroke, Not Specified As Haemorrhage Or Infarction	590	2	6.52	4	16.75
9	C50.9	Malignant Neoplasm Breast, Unspecified	509	1	7.5	5	20.25
10	I46.9	Cardiac Arrest, Unspecified	438	1	8.61	3	61.25

No.	Code	Direct Cause of Death	No. Cases	%	LOS		
					Mean	Median	2SD
1	A41.9	Sepsis, Unspecified	9,107	23.58	8.7	6	17.4
2	J18.9	Pneumonia, Unspecified	3,031	7.85	5.9	4	14.2
3	I24.9	Acute Ischaemic Heart Disease, Unspecified	1,360	3.52	4.0	3	5.8
4	R57.2	Septic Shock	1,095	2.83	10.7	8	21.0
5	J69.0	Pneumonitis due to Food and Vomit	1,017	2.63	7.8	6	20.6
6	R57.0	Cardiogenic Shock	1,001	2.59	8.1	7	12.0
7	C34.9	Malignant Neoplasm, Bronchus or Lung, Unspecified	664	1.72	6.0	3	13.6
8	I64	Stroke, Not Specified As Haemorrhage or Infarction	600	1.55	5.5	4	20.6
9	C50.9	Malignant Neoplasm Breast, Unspecified	600	1.55	5.7	4	17.2
10	I63.9	Cerebral Infarction, Unspecified	540	1.40	5.9	4	15.2



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# Key Findings: 2017 & 2018

PARAMETERS	DEFINITION	DESCRIPTION
Base rate:	<p>Average cost per encounter per care</p> $BR_t = \frac{HP_t}{\sum_h Cases_{h,t-1}}$	<ul style="list-style-type: none"> <li>BR<sub>t</sub> = Base rate in year<sub>t</sub></li> <li>HP<sub>t</sub>= Hospital Pool in year<sub>t</sub></li> <li>Cases<sub>h,t-1</sub> = Total number of patients in hospital h, in year t-1</li> </ul> <p>BR depends on the amount budget allocated to each hospital and the number of patients treated by the respective hospital.</p>
Severity of Illness:	<p>It is a three-level index (level 1 to level 3) determined from the values of several dimensions related to a patient's burden of illness.</p>	<p>Severity of Illness Index assigns to each patient at discharge an overall severity score that is determined from the scores of medically meaningful dimensions to reflect burden of illness; Complication, co-morbidities, multiple procedures, ICU-stay &amp; Age split</p>
Average Length of Stay (ALOS):	<p>Mean duration of a single episode of hospitalization; calculated by subtracting day of admission from day of discharge</p>	<ul style="list-style-type: none"> <li>Indicator of technical efficiency</li> <li>Influenced by clinical pathway &amp; standard of practice</li> </ul>
Readmission rate:	<p>An episode when a patient who had been discharged from a hospital is admitted again for the same diagnosis within a specified time interval</p>	<ul style="list-style-type: none"> <li>Indicator for quality of care</li> </ul>

## ACKNOWLEDGEMENT

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