



National University  
Hospital

# THE OUTCOMES BOOK

National University Hospital (Singapore)

NUH Quality Indicators by Conditions and Procedures

2025

# The Outcomes Book

National University Hospital (Singapore)

NUH Quality Indicators by Conditions and Procedures

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## **Cardiology**



## Transcatheter Aortic Valve Replacement (TAVI/TAVR)

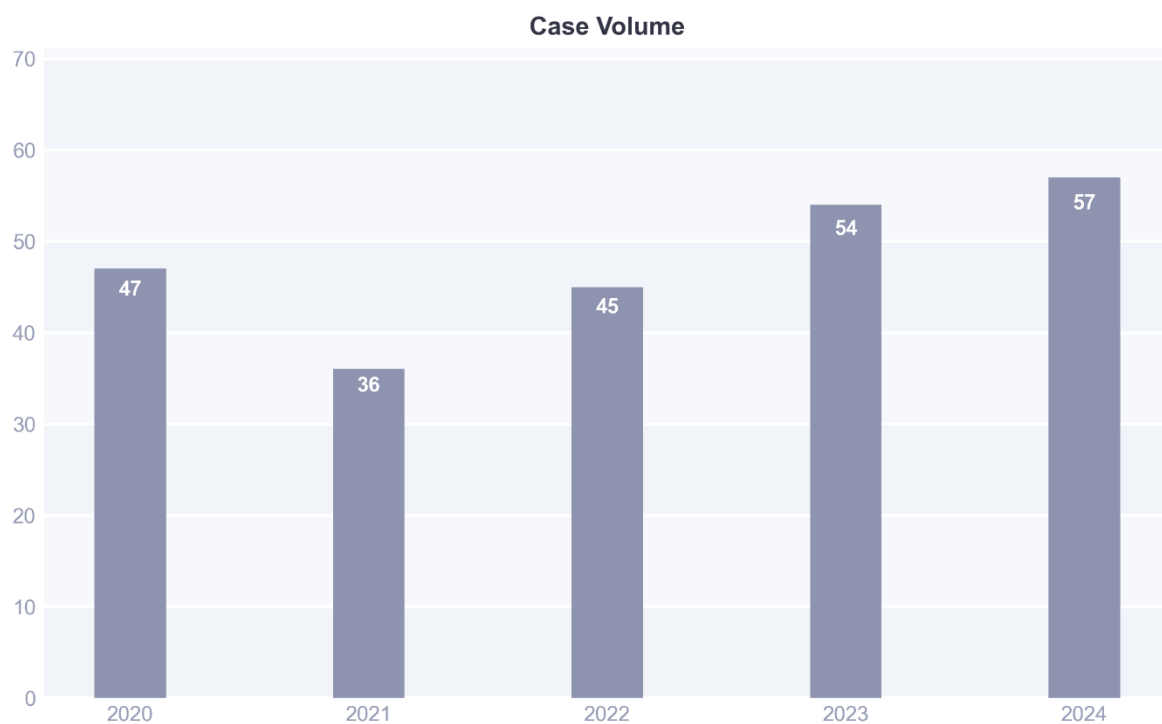
### Number of Patients with Transcatheter Aortic Valve Replacement

#### Definitions

**TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR):** A minimally invasive procedure that replaces a narrowed or diseased aortic valve with a man-made valve.

**PATIENTS WITH TAVR:** Collected from NUH TAVR Database

#### Results



#### Interpretation

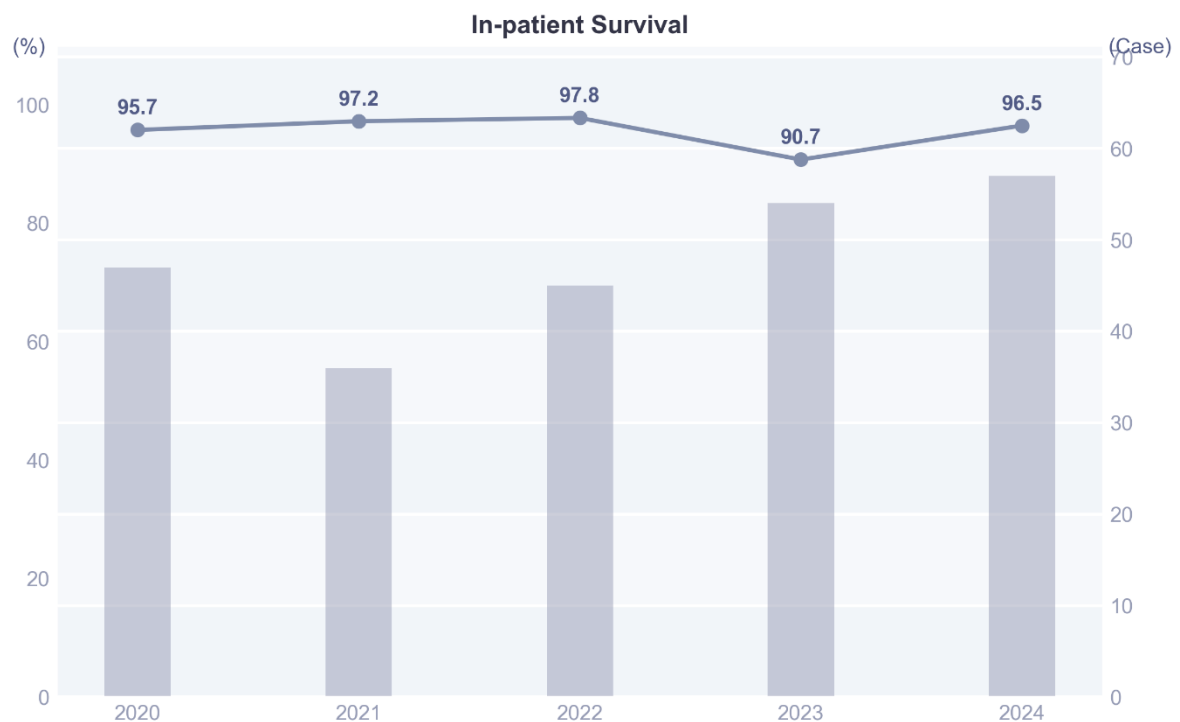
More patients were benefited clinically from the treatment as the number of TAVI/TAVR cases per year increased over the last five years.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

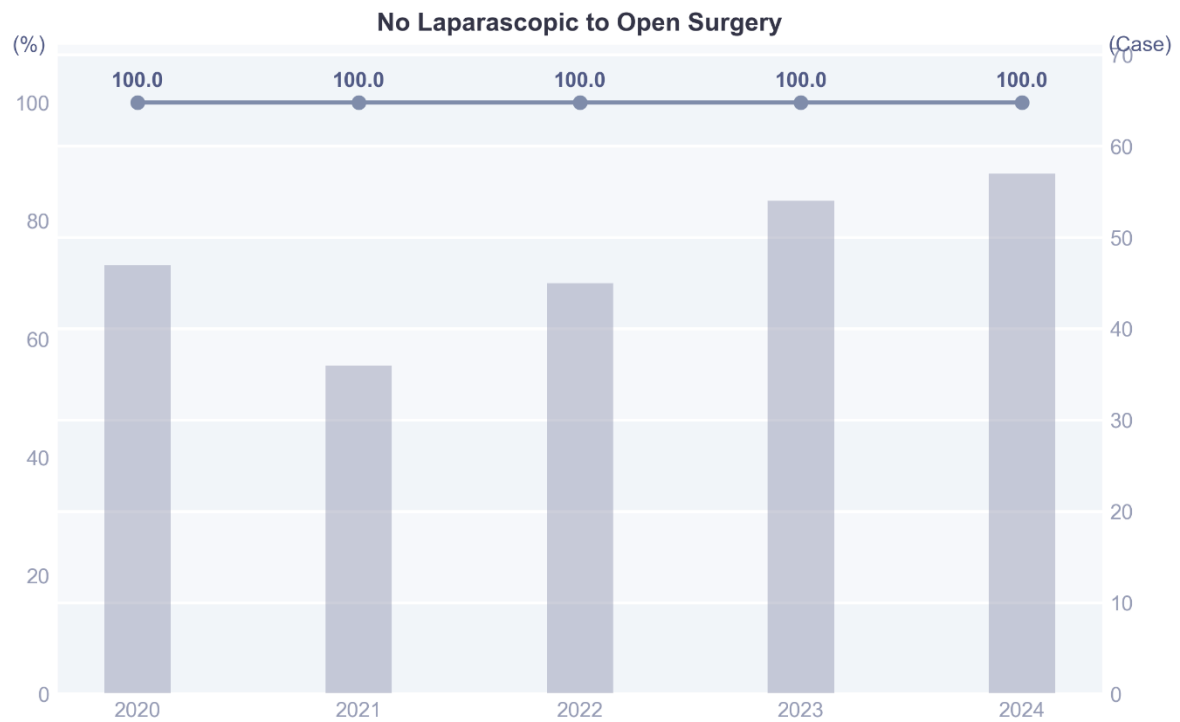
Rate of in-patient survival is above 95% for most years.

## No Conversion from Laparoscopic to Open Surgery

### Definitions

Patients undergoing laparoscopic surgery should not require intraoperative conversion to open surgery. This measure reflects surgical proficiency and appropriate case selection.

### Results



### Interpretation

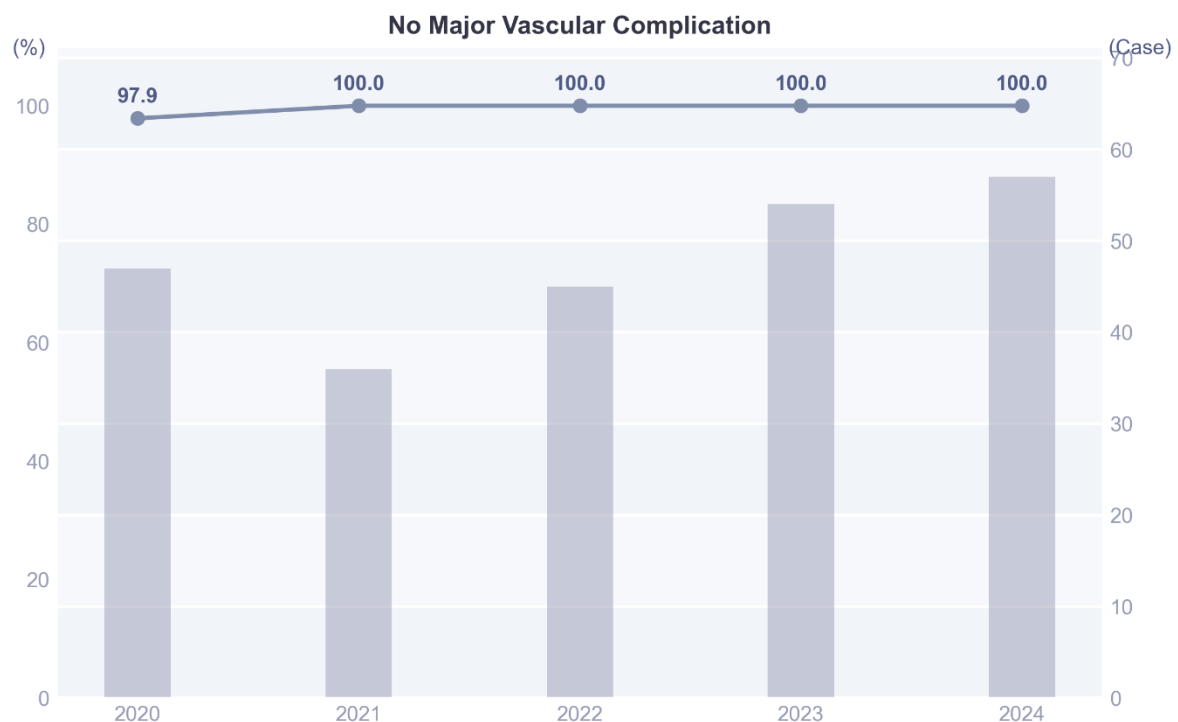
There are no incidents of laparoscopic procedure changed to open surgery.

## Postoperative Complications and Quality of Care

### Definitions

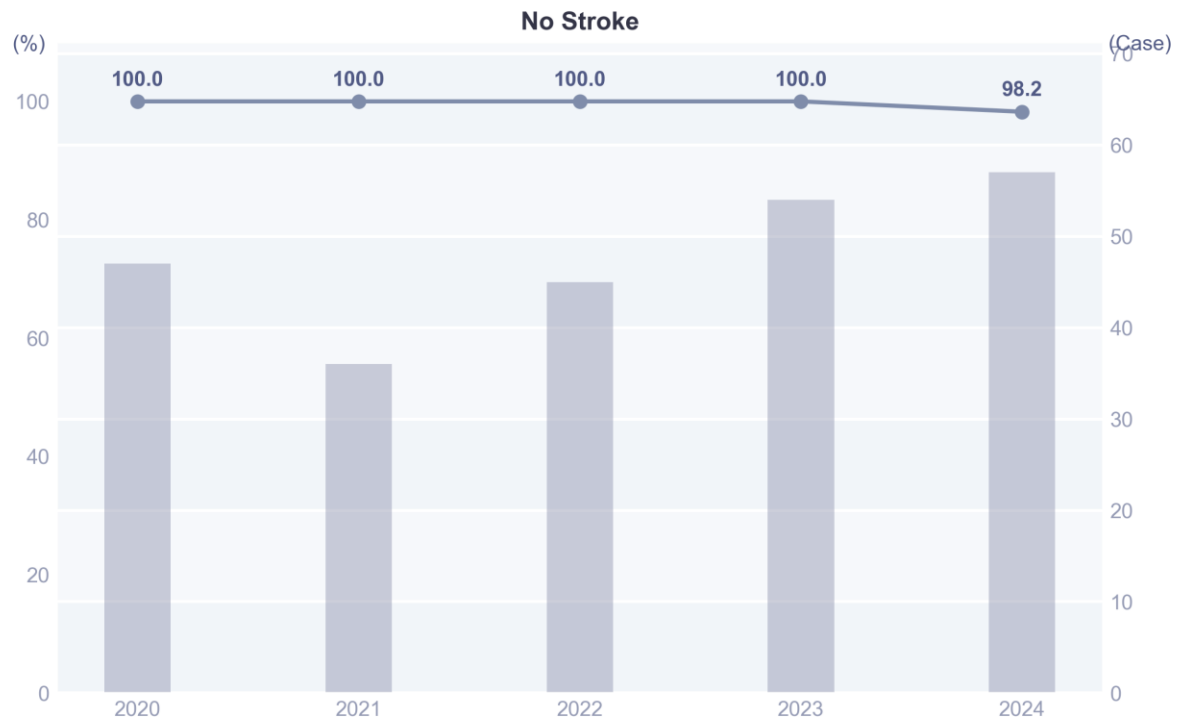
1. **NO MAJOR VASCULAR COMPLICATION POST-PROCEDURE:** The patient did not experience any major vascular complications at the catheter access site or other vascular territories post-TAVI.
2. **NO STROKE POST-PROCEDURE:** The patient did not experience a clinical stroke following the TAVI procedure. Stroke is a serious but known complication due to embolic events during valve deployment.

### Results



### Interpretation

No incidents of major vascular complications since 2021.



*Interpretation*

Nearly zero incidents of stroke for the last five years.

## Congestive Heart Failure (CHF)

### Number of Patients with Congestive Heart Failure

#### Definitions

**CONGESTIVE HEART FAILURE:** Heart failure, also known as congestive heart failure, is a syndrome caused by an impairment in the heart's ability to fill with and pump blood. Although symptoms vary based on which side of the heart is affected, HF typically presents with shortness of breath, excessive fatigue, and bilateral leg swelling.

#### PATIENTS WITH CONGESTIVE HEART FAILURE:

1. Diagnosis Codes: I500, I509, I501, I110
2. With Non-Cardiac Procedures
3. Patients  $\geq 21$  years old
4. Excluding patients on hemodialysis/peritoneal dialysis

#### Results



#### Interpretation

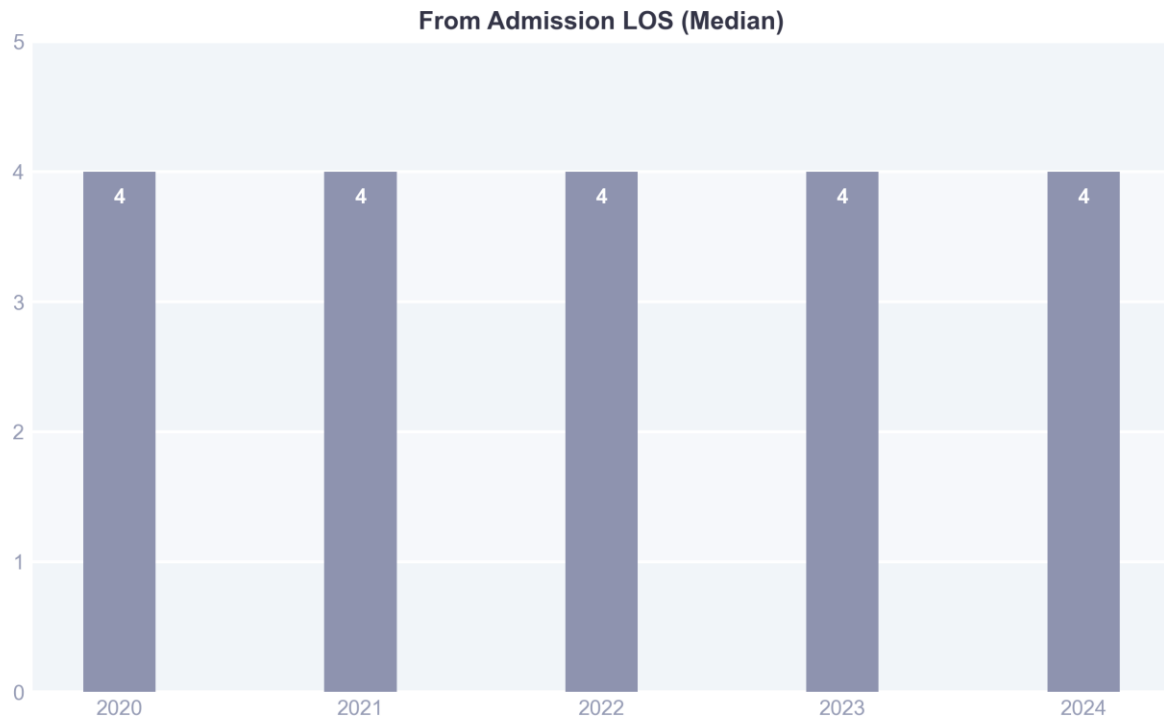
The number of cases per year has increased by about 200 from 2020 to 2024.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

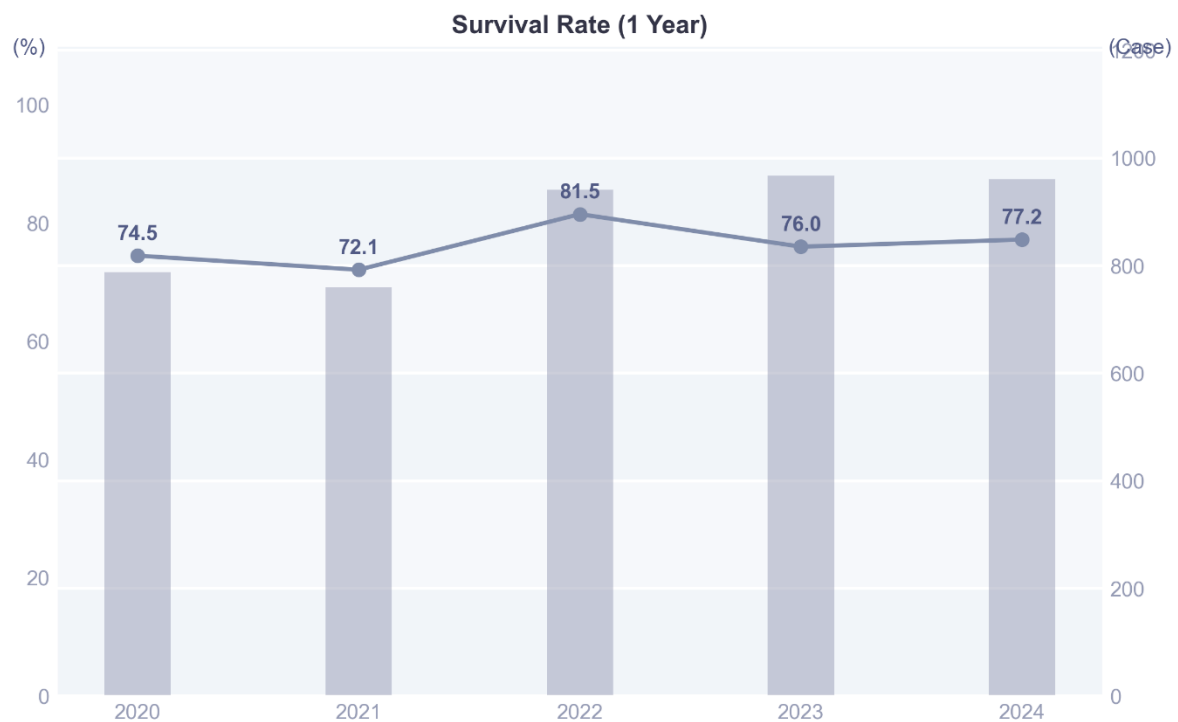
Median length of stay for congestive heart failure cases have maintained at 4 days over the last five years.

## Survival Rate (In-hospital and One-Year Post Discharge)

### Definitions

The proportion of patients who survive during the hospital stay and one year post discharge, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

Survival rate within 1 year has increased over the years.



## No Complication During Admission or Within 30 Days Post-Discharge

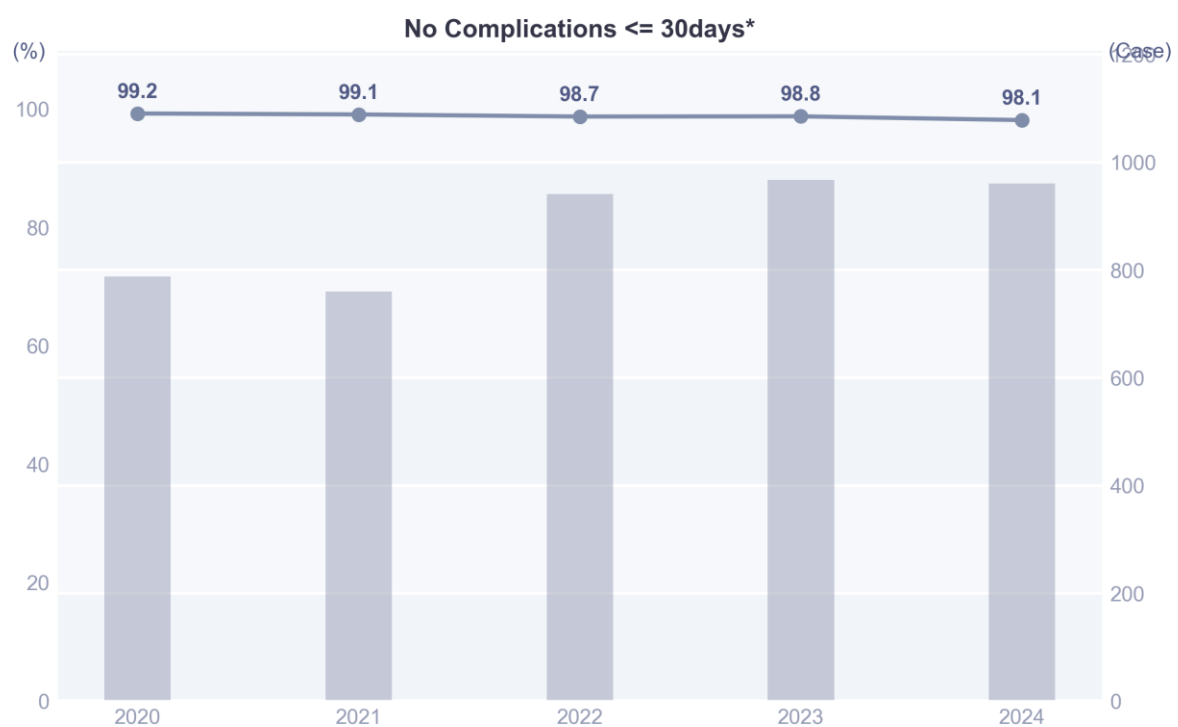
### Definitions

A **COMPLICATION** is defined as:

- Any secondary diagnosis recorded during the index admission that was **not present on admission**, and/or
- Any primary or secondary diagnosis recorded during a **readmission within 30 days** of the initial discharge.

Patients should experience **no such complications** during their hospital stay or within 30 days following discharge.

### Results



### Interpretation

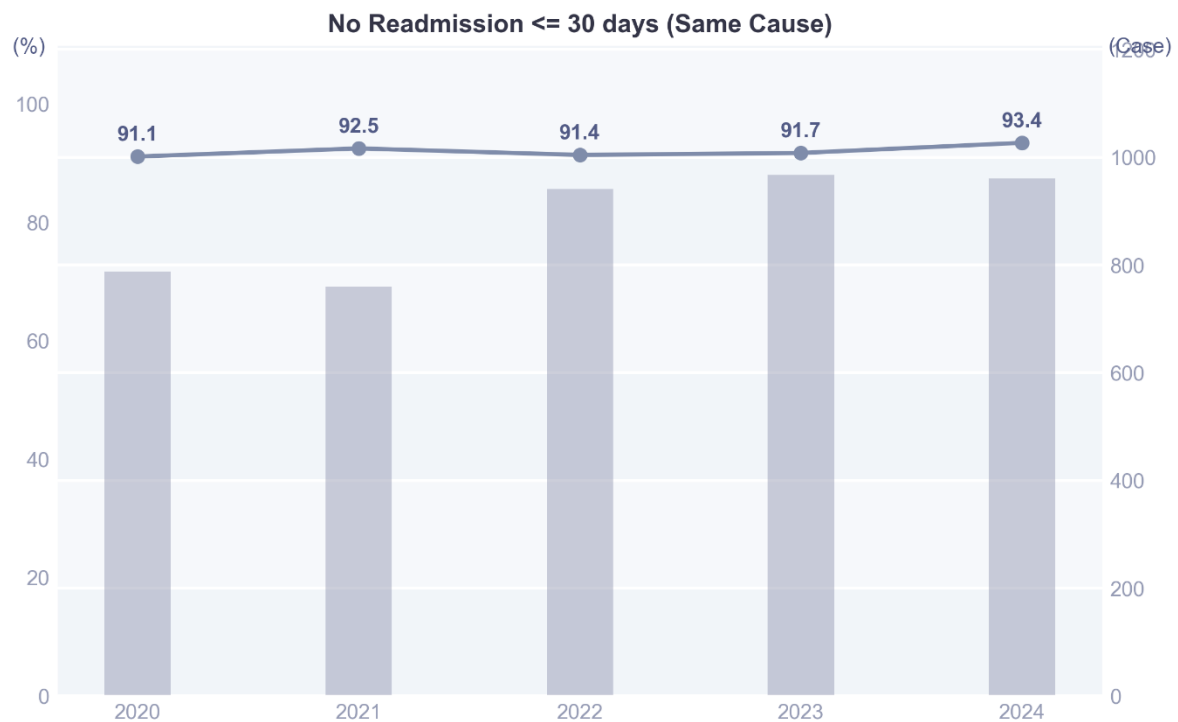
Rate of no complication within 30 days has maintained at above 98% over the last five years.

## No Emergency Readmission within 30 days and 6 months (Cardiac Related Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for heart failure related reasons within 30 days or 6 months following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

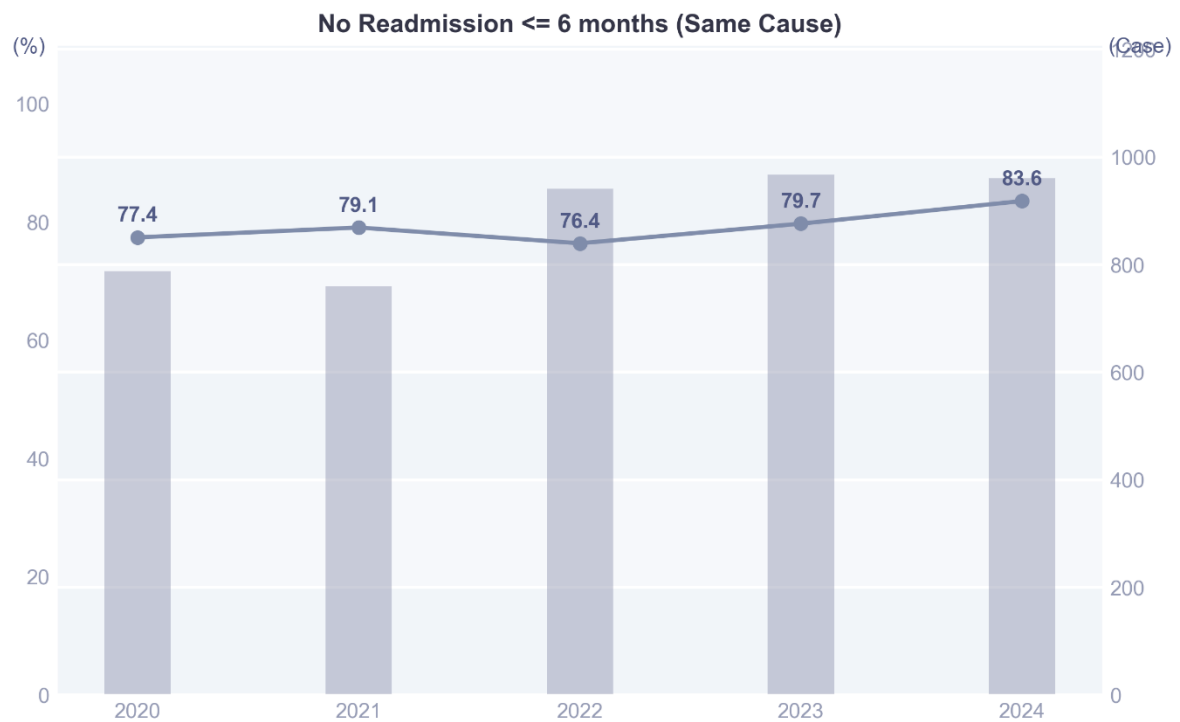
### Results



### Interpretation

The rate of no readmission due to cardiac related causes within 30 days has maintained above 90% for the last five years.

### Results



### Interpretation

The rate of no readmission due to cardiac related causes within 6 months has improved over the last five years.

## Appropriateness of Care: Discharge Medications for LVEF $\leq 40\%$

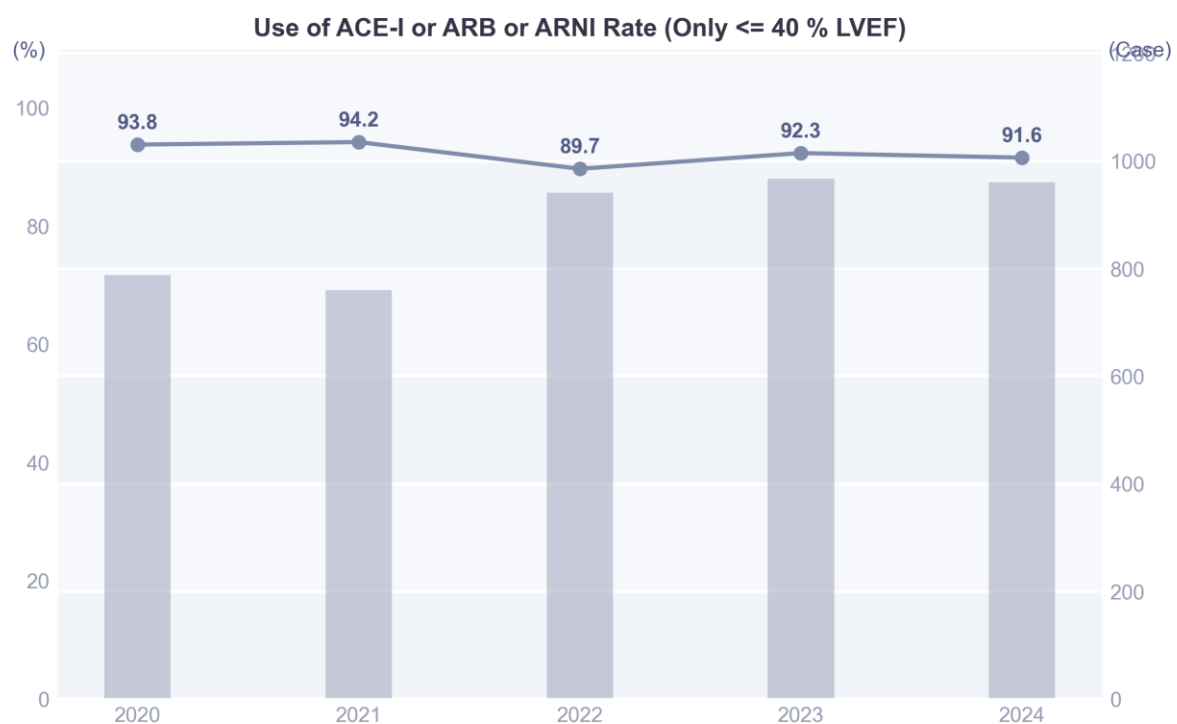
### Definitions

For patients with a **LEFT VENTRICULAR EJECTION FRACTION (LVEF)  $\leq 40\%$** , the following evidence-based medications should be prescribed at discharge unless contraindicated:

- ACE inhibitors (ACEi), angiotensin receptor blockers (ARB), or angiotensin receptor–neprilysin inhibitors (ARNI)
- Beta-blockers

This measure reflects adherence to guideline-directed medical therapy (GDMT) for heart failure with reduced ejection fraction (HFrEF) to improve clinical outcomes and reduce rehospitalization.

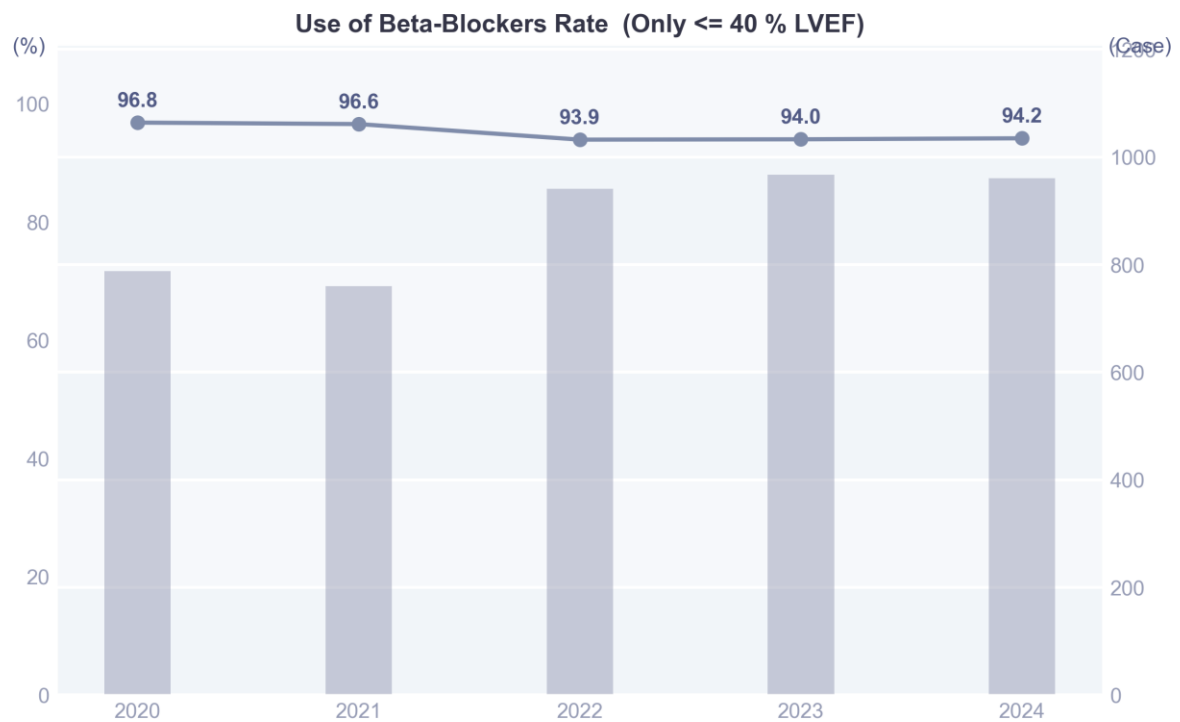
### Results



### Interpretation

For most years, the percentage of cases prescribed ACE-I, ARB or ARNI medication has maintained above 90%.

### Results



### Interpretation

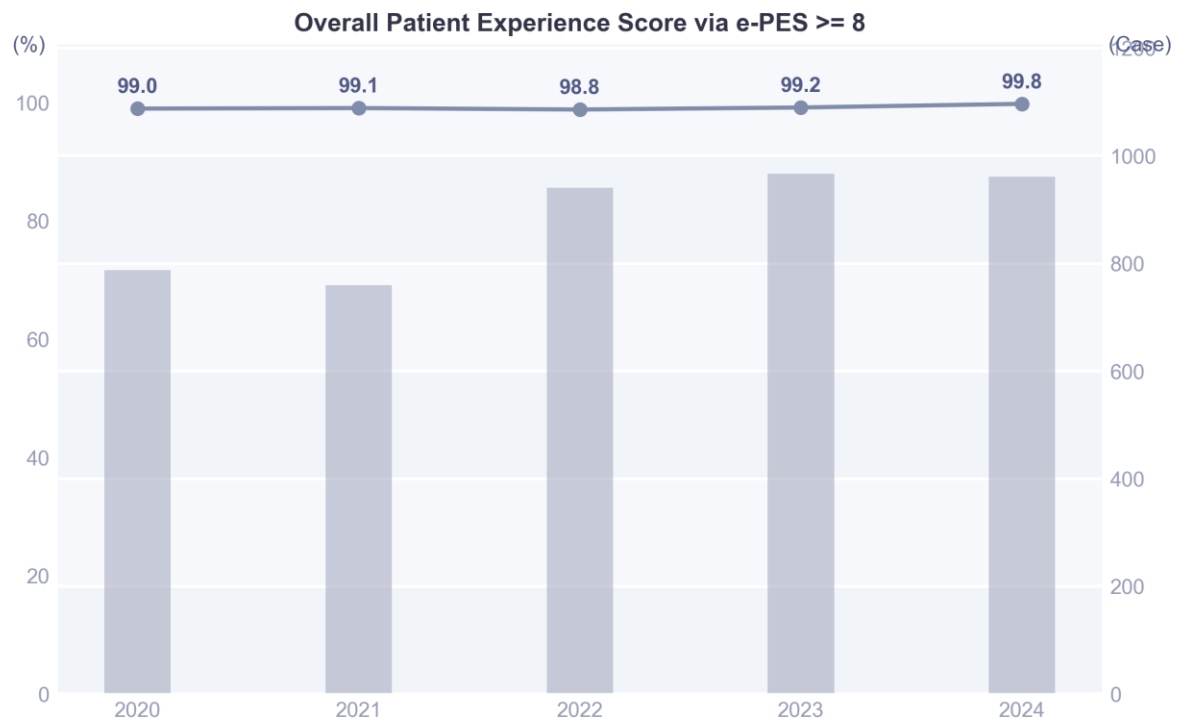
For most years, the percentage of cases prescribed Beta-blocker medication has maintained above 94%.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

The percentage of patient satisfaction score above 8 has hold above 98.5% over the last five years.

## Coronary Artery Bypass Graft (CABG)

### Number of Patients with Coronary Artery Bypass Graft (CABG)

#### Definitions

**CORONARY ARTERY BYPASS GRAFT (CABG)**, also known as coronary artery bypass graft, is a surgical procedure to treat coronary artery disease, the buildup of plaques in the arteries of the heart. It can relieve chest pain caused by CAD, slow the progression of CAD, and increase life expectancy.

**PATIENTS WITH CORONARY ARTERY BYPASS GRAFT** were collected by MOH TOSP Code (Single or multiple TOSPs): SD/LD812H, SD/LD742H, SD/LD722H.

#### Results



#### Interpretation

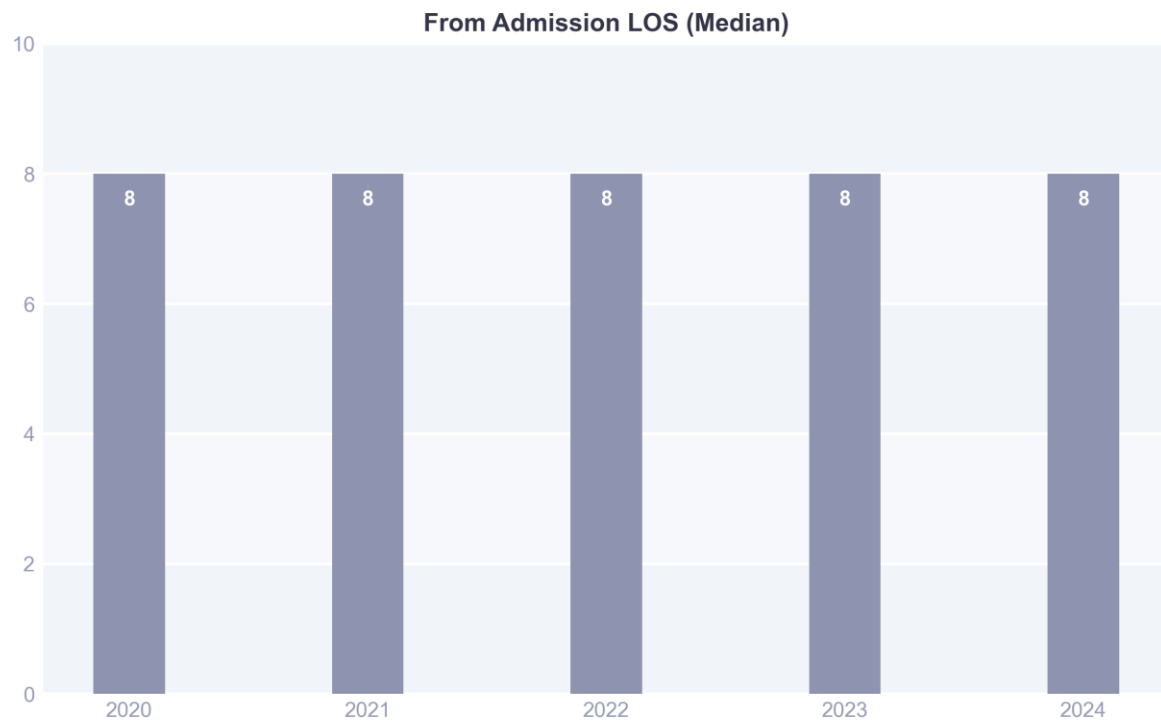
In the last five years, CABG cases per year ranges from around 390 to 480.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

The median Length of Stay is 8 days for the past five years.

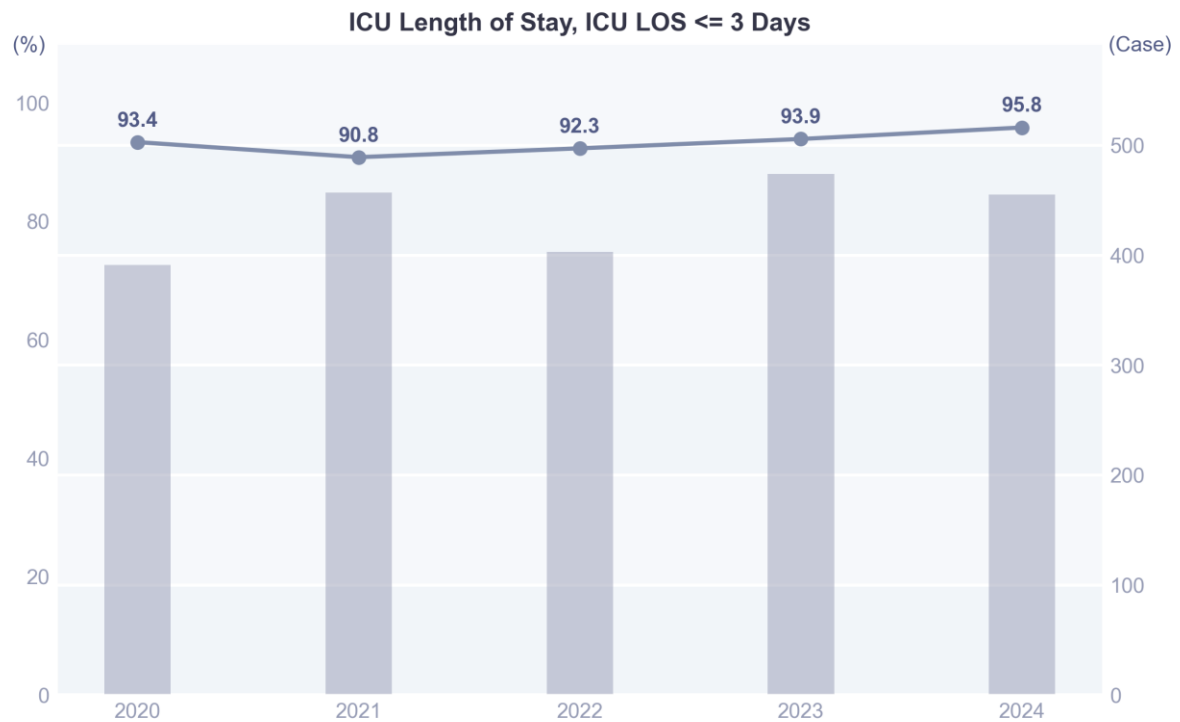


## ICU Length of Stay

### Definitions

Length of stay in intensive care unit (ICU) should be within 3 days.

### Results



### Interpretation

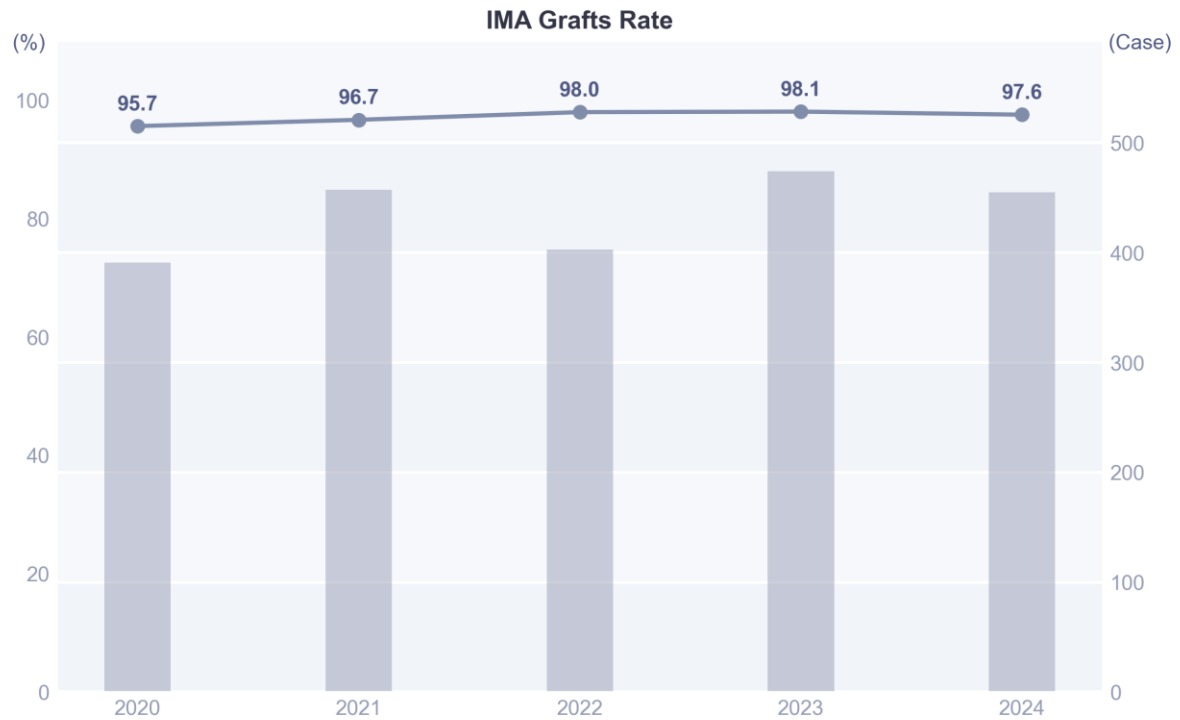
The percentage of cases with ICU stay shorter than 3 days has improved over the years.

## IMA Grafts

### Definitions

In Coronary Artery Bypass Grafting (CABG), the Internal Mammary Artery (IMA) is considered the gold standard conduit for bypassing the left anterior descending (LAD) artery.

### Results



### Interpretation

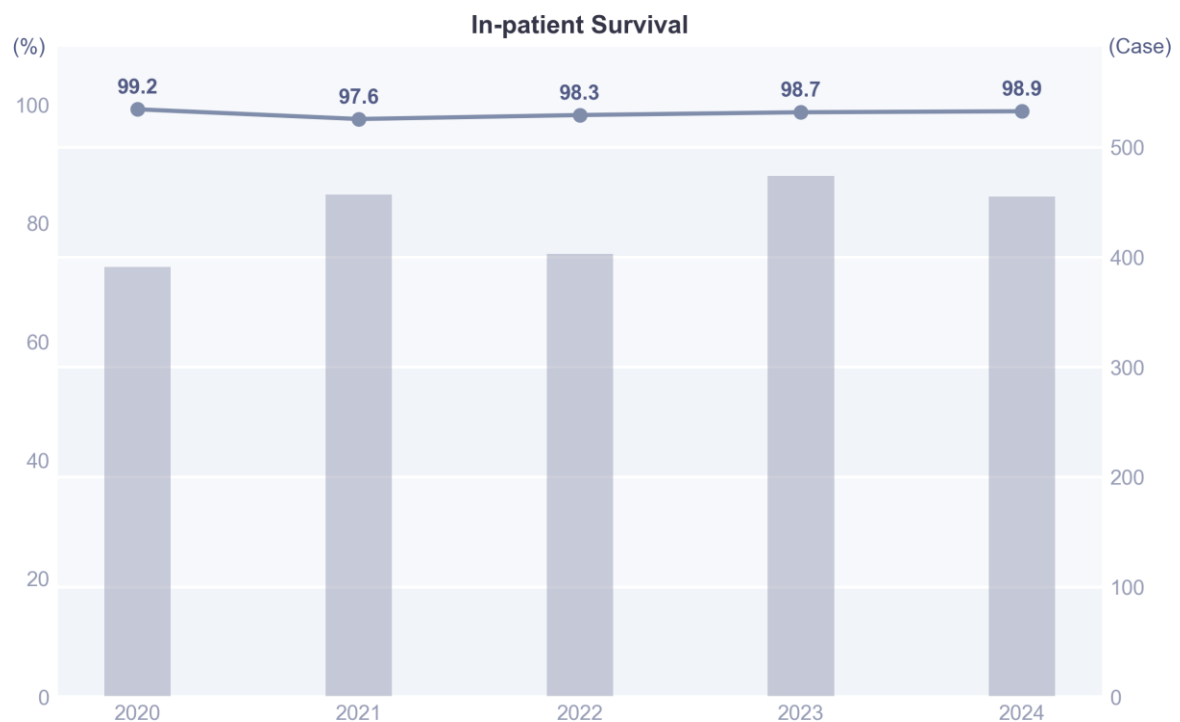
Percentage of cases with IMA grafts have improved from 2020 and holds steady at around 98%.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

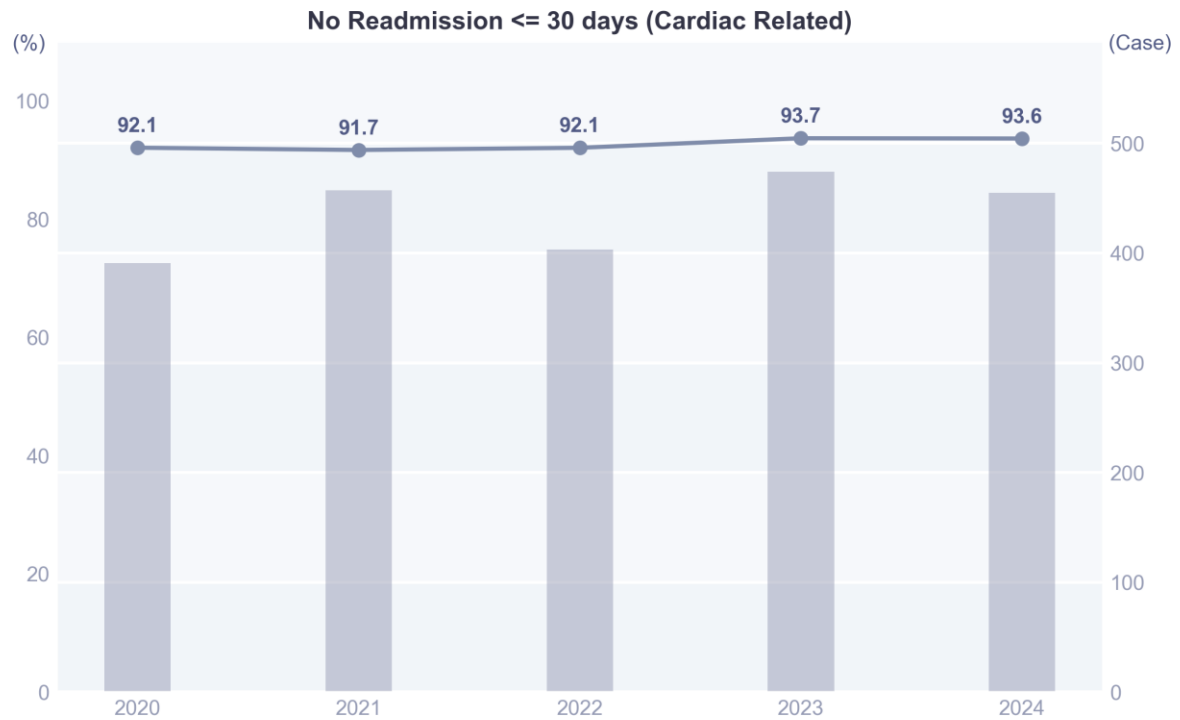
In most years, the rate of in-patient survival is above 98%.

## No Emergency Readmission within 30 Days Due to Cardiac-Related Causes

### Definitions

Patients should not be readmitted via emergency to the hospital within 30 days from the initial discharge due to cardiac-related reasons, defined using diagnosis codes and cardiac procedures.

### Results



### Interpretation

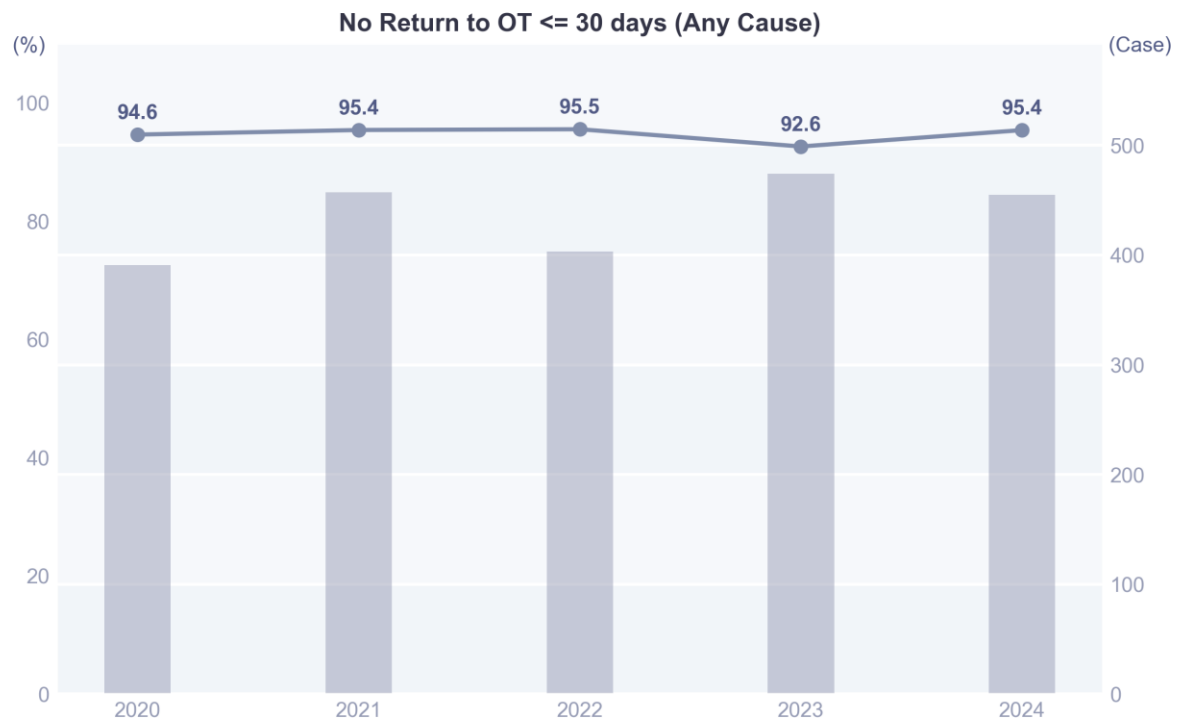
No emergency readmission rate improved slightly over the years.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

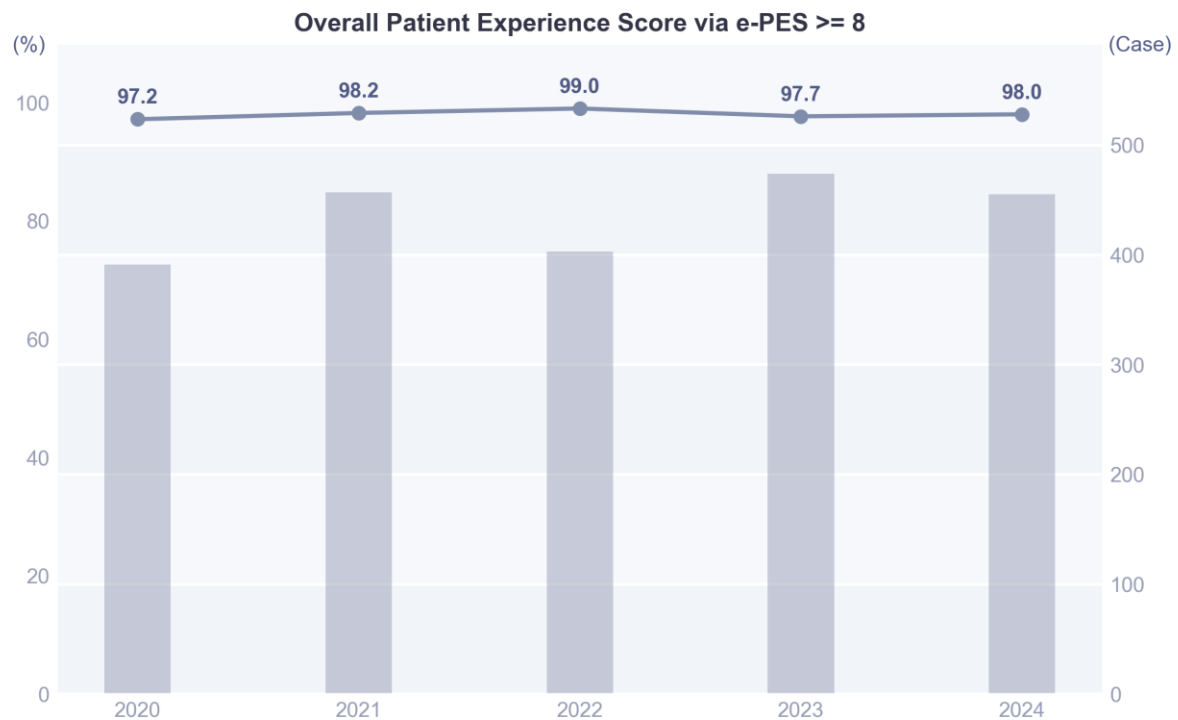
No return to OT due to CABG related causes has mostly maintained at around 95% over the years.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Percentage of patient satisfaction score above satisfaction has maintained at high level over the years.

## **Dentistry**

## Dental Implant

### Number of Patients with Dental Implant

#### Definitions

**DENTAL IMPLANT:** A dental implant is a surgical fixture, usually made of titanium, that is placed into the jawbone to act as a replacement for the root of a missing tooth.

#### PATIENTS WITH DENTAL IMPLANT:

Collected by MOH TOSP Code: SB816M

#### Results



#### Interpretation

The number of cases increased from 211 in 2020 to a peak of 313 in 2021, followed by fluctuations with 246 in 2022, 287 in 2023, and 240 in 2024.

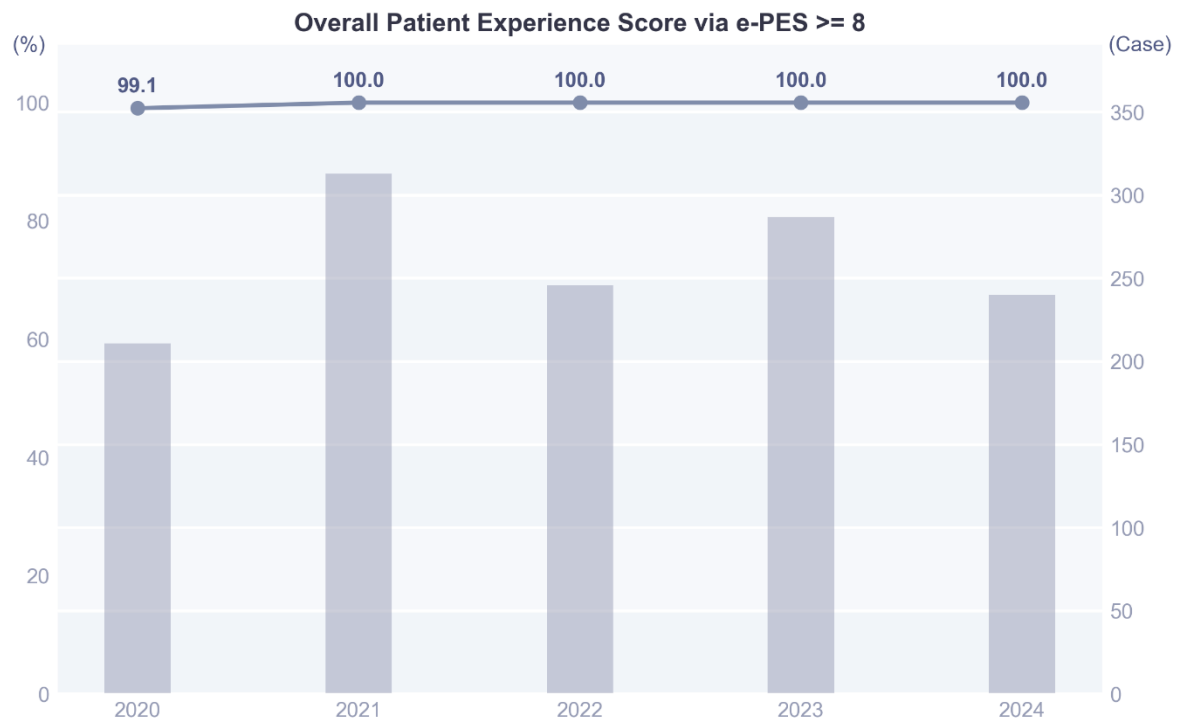


## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with outpatient day surgery services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

The overall patient satisfaction has shown a steady rate since 2021.

## **General Surgery**

## Haemorrhoidectomy

### Number of Patients with Haemorrhoidectomy

#### Definitions

**HAEMORRHOIDECTOMY** is a surgical procedure to remove internal or external haemorrhoids that are symptomatic or severe.

**PATIENTS WITH HAEMORRHOIDECTOMY (1 DAY)**: were collected by TOSP codes (single or multiple of the following codes): SF836A; LF836A; SF837A; LF837A; SF838A; LF838A; SF721A; LF721A, SF702R, LF702R. Priority of surgery is elective.

#### Results



#### Interpretation

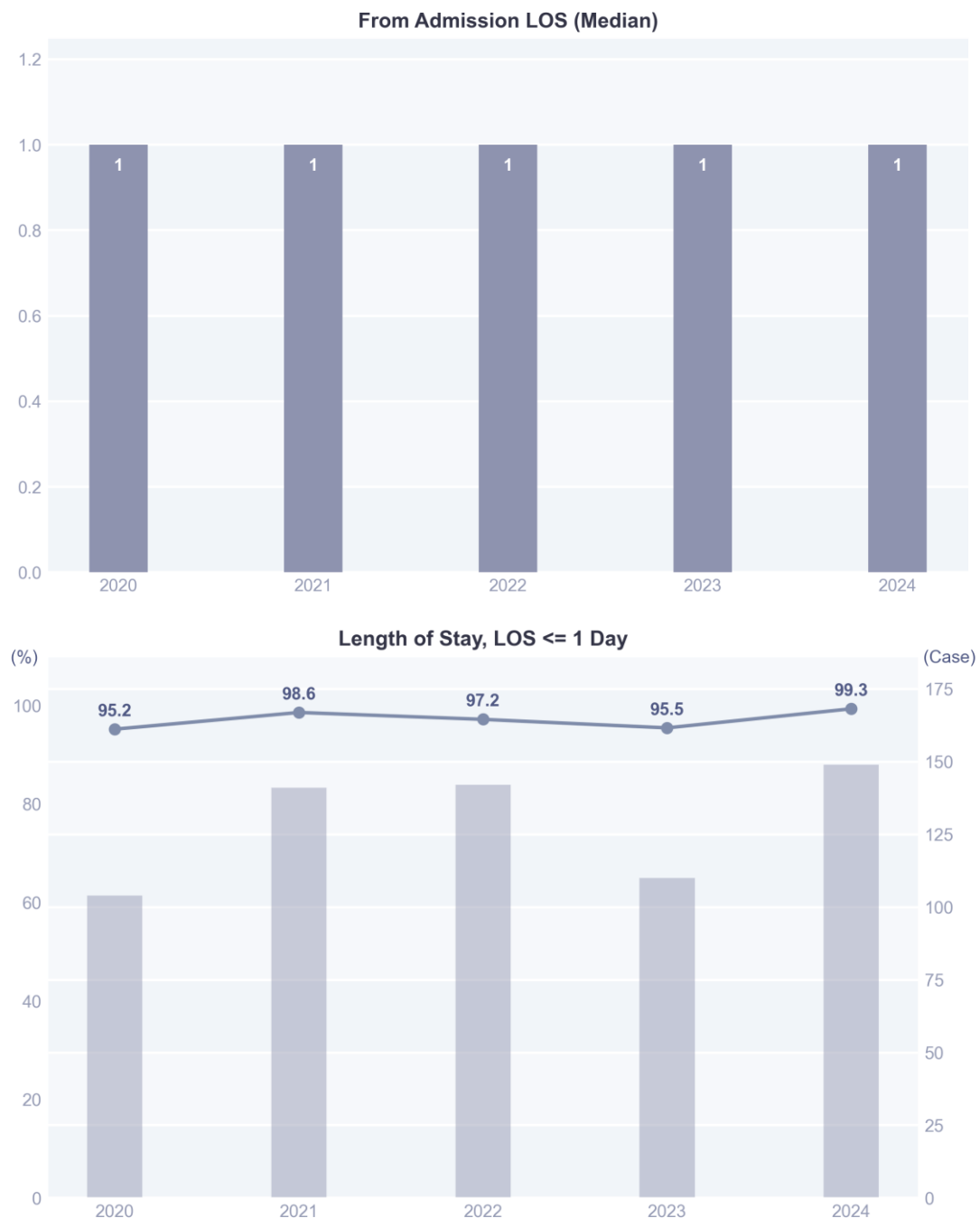
The number of Haemorrhoidectomy cases in NUH increased since 2021 with 141 cases and reached to 149 in 2024 after dropping to 110 in 2023.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

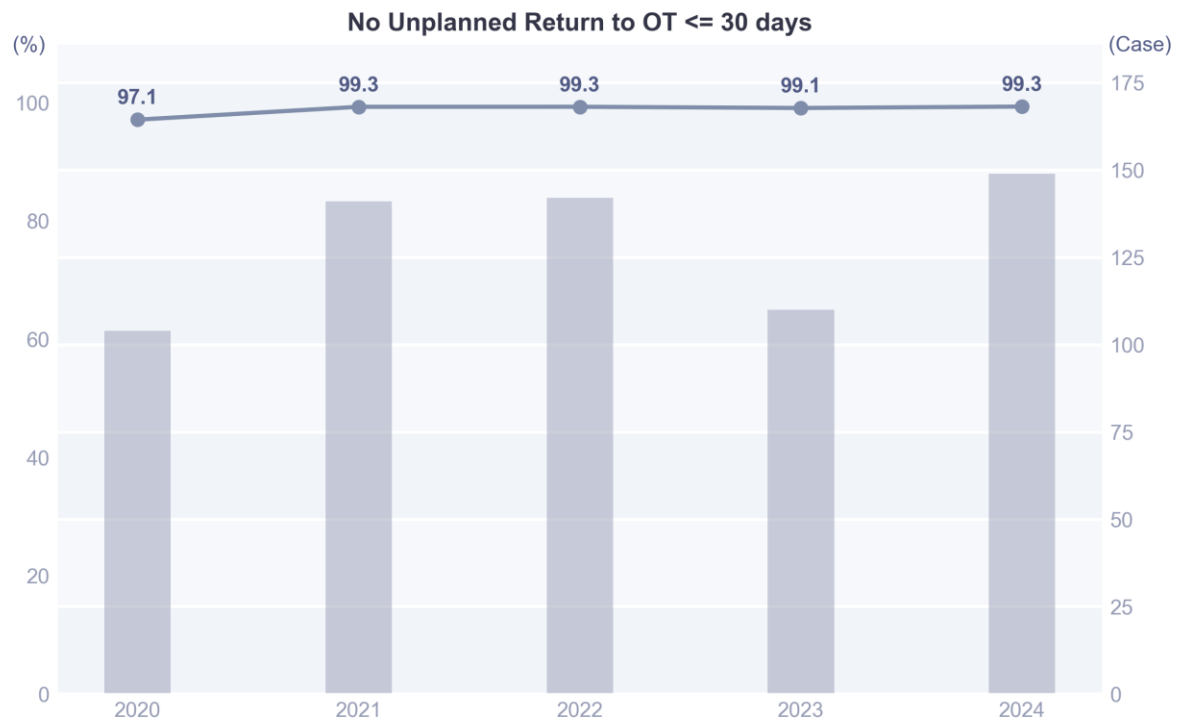
95.5% to 99.3% of patients in past five years were able to discharge within 1 day.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause.

### Results



### Interpretation

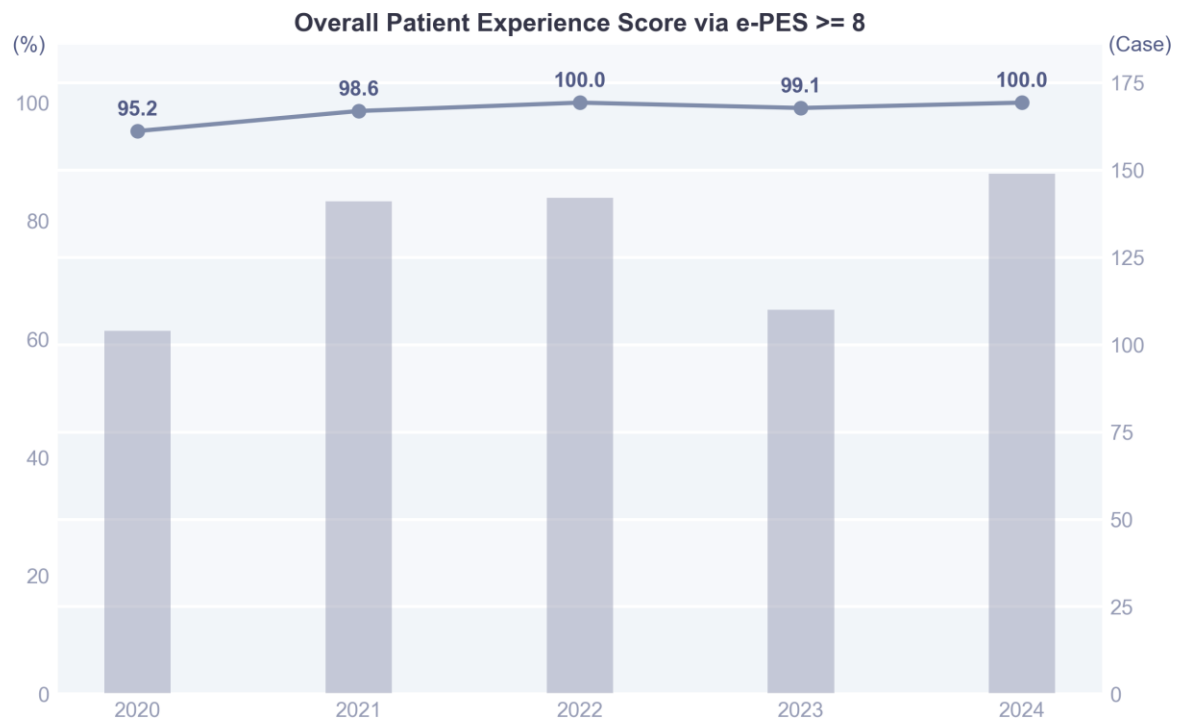
‘No unplanned return to OT’ rate was stable since 2021.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

High percentage of patient satisfaction in inpatient ward experience was observed.

## Colorectal Resection (For Colorectal Cancer)

### NUH-VDO Definition

| Cohort             |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cohort Definition  | By MOH TOSP Code (Single or multiple TOSPs):-<br>TOSP Codes:<br>SF709A,LF709A,SF804C,LF845A,SF848A,SF845A,LF848A,LF707I,SF806C,<br>LF701C,LF703R,LF712C,LF800C,LF801C,LF802C,LF803C,LF804C,LF805R,<br>LF806C,LF808R,SF701C,SF703R,SF712C,SF800C,SF802C,SF803C,SF805R,<br>SF806R,SF807R<br>Primary Diagnosis code:C19,C184,C20,C185,C187,C180,C182,C186,C188<br>C183,C172,C181' |                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Quality Indicators |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1                  | Length of Stay, LOS < 7 days                                                                                                                                                                                                                                                                                                                                                   | Patients should stay < 7 days (Total LOS is the duration from Date of Admission to Date of Discharge)                                                                                                                                                                                                                                                                                                             |
| 2                  | No in hospital mortality                                                                                                                                                                                                                                                                                                                                                       | Patients should not die in hospital                                                                                                                                                                                                                                                                                                                                                                               |
| 3                  | No unscheduled return to OT ≤ 30 days                                                                                                                                                                                                                                                                                                                                          | Patients should not return to OT in same episode or ≤ 30 days of discharge                                                                                                                                                                                                                                                                                                                                        |
| 4                  | No emergency readmission in ≤ 30 days (All cause)                                                                                                                                                                                                                                                                                                                              | Patients should not be readmitted in emergency to hospital in ≤ 30 days of initial discharge                                                                                                                                                                                                                                                                                                                      |
| 5                  | Same day admission as surgery (Remove as per clinician req)                                                                                                                                                                                                                                                                                                                    | Patients should have surgery on the same day they were admitted to the hospital                                                                                                                                                                                                                                                                                                                                   |
| 6                  | Oral analgesia (Yes or no) (Remove as per clinician req)                                                                                                                                                                                                                                                                                                                       | Patients should have taken Oral analgesia during their admission stay in the hospital                                                                                                                                                                                                                                                                                                                             |
| 7                  | VTE prophylaxis (Yes or no) (Remove as per clinician req)                                                                                                                                                                                                                                                                                                                      | Patients should have taken VTE prophylaxis during their admission stay in the hospital                                                                                                                                                                                                                                                                                                                            |
| 8                  | PES Score ≥ 8                                                                                                                                                                                                                                                                                                                                                                  | Patient experience score should be between 8 to 10                                                                                                                                                                                                                                                                                                                                                                |
| 9                  | No Post-Op Complication in ≤ 30 Days of Discharge                                                                                                                                                                                                                                                                                                                              | No Procedure-related complications within the hospital admission or ≤ 30 days of initial discharge (complication is defined as secondary diagnosis of current admission that does not present on admission, and primary or secondary diagnosis of subsequent readmissions within ≤ 30 days of initial discharge)<br><br>(Note: NUH's identified list of complications based on identified ICD-10 diagnosis codes) |
| 14                 | No blood transfusion rate (not for GQI calculation)                                                                                                                                                                                                                                                                                                                            | No blood transfusion is done for patient during the hospital admission                                                                                                                                                                                                                                                                                                                                            |

(Note: VDO indicators for reference only, the table will be removed from the publication later)

## Number of Patients with Colorectal Resection (For Colorectal Cancer)

### Definitions

**COLORECTAL RESECTION (FOR COLORECTAL CANCER)** refers to the surgical removal of a segment of the colon or rectum for the retreatment of colorectal cancer.

**PATIENTS WITH COLORECTAL RESECTION:** Collected by MOH TOSP Code and Primary Diagnosis codes (ICD-10). It includes emergency cases.

### TOSP codes (single or multiple):

SF709A, LF709A, SF804C, LF845A, SF848A, SF845A, LF848A, LF707I, SF806C, LF701C, LF703R, LF712C, LF800C, LF801C, LF802C, LF803C, LF804C, LF805R, LF806C, LF808R, SF701C, SF703R, SF712C, SF800C, SF802C, SF803C, SF805R, SF806R, SF807R

### Primary diagnosis code:

C19, C184, C20, C185, C187, C180, C182, C186, C188, C183, C172, C181

### Results



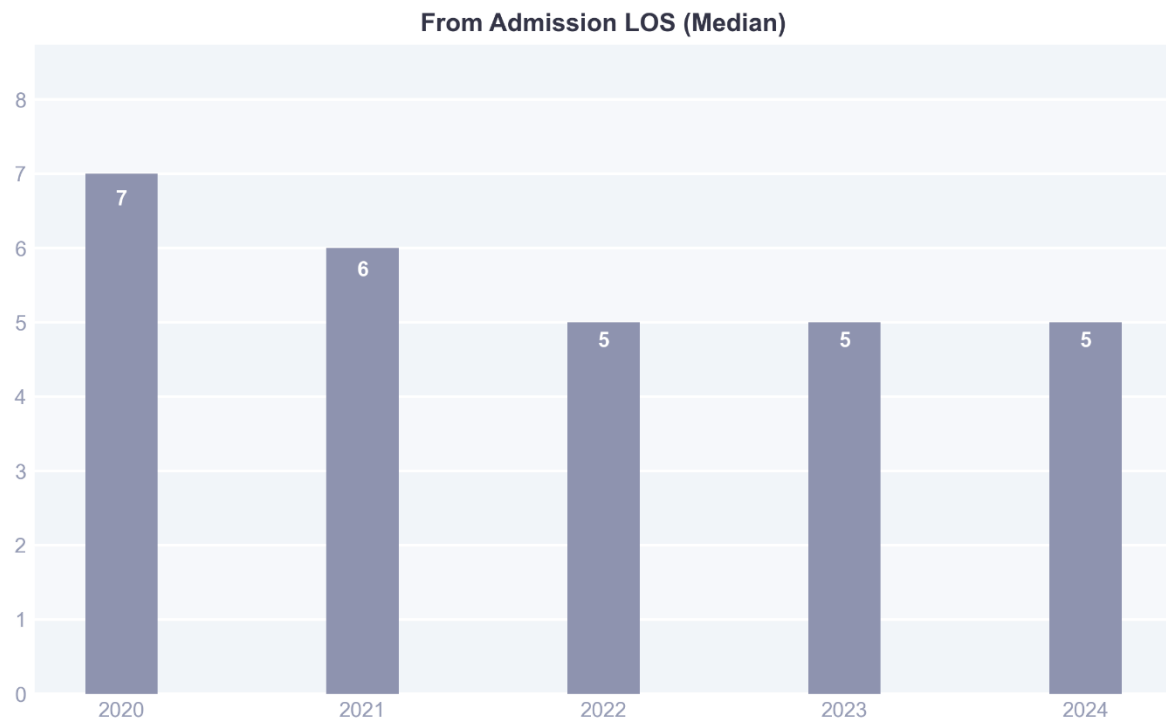


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

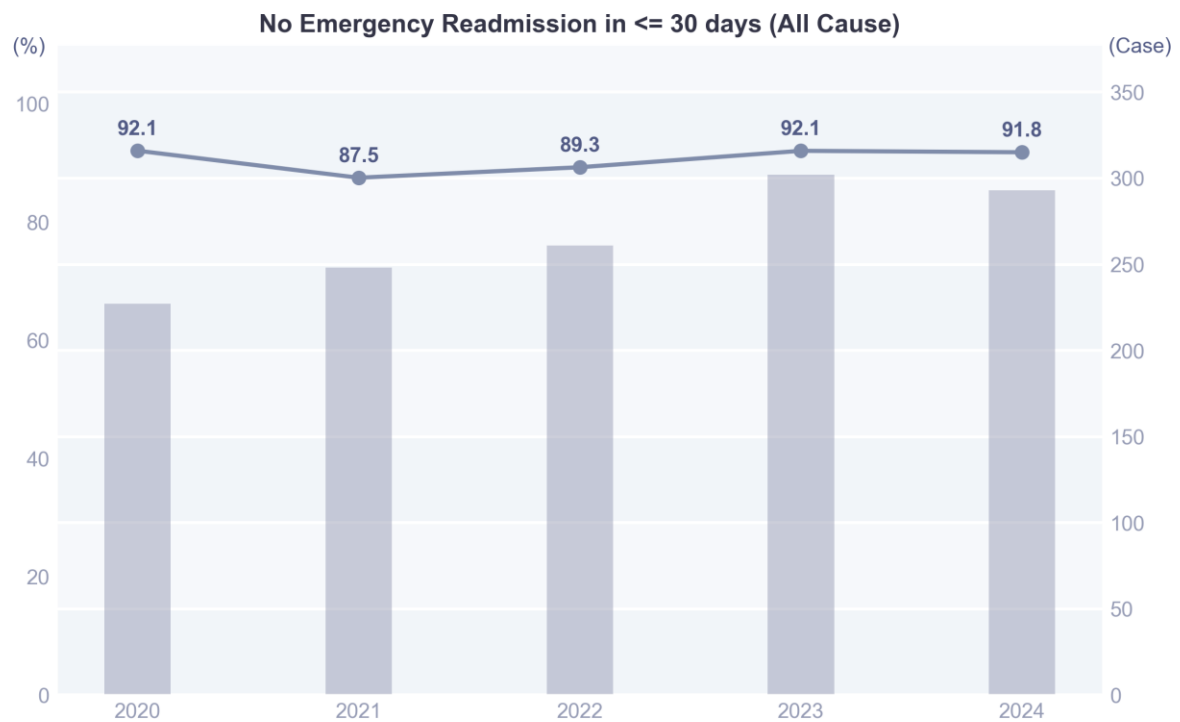
Median LOS has declined since 2020 and remained constant since 2022 till 2024

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

No Emergency Readmission rates improved since 2022

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

In Hospital survival rates improved since 2022

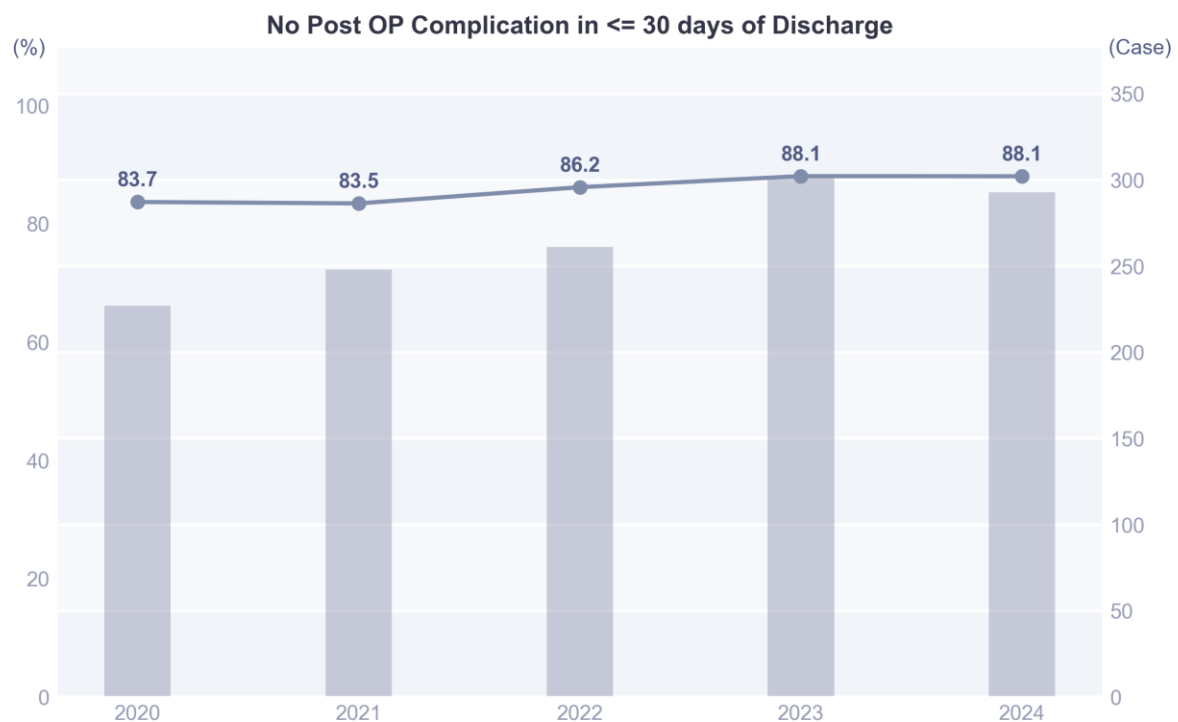
## No Complication within admission or 30 days from the initial discharge

### Definitions

**COMPLICATION** is defined as any record of secondary diagnosis during the current admission that does not present on admission, and primary or secondary diagnosis of subsequent readmissions within 30 days from the initial discharge.

Patients should not have complications within the hospital admission or within 30 days of initial discharge.

### Results



### Interpretation

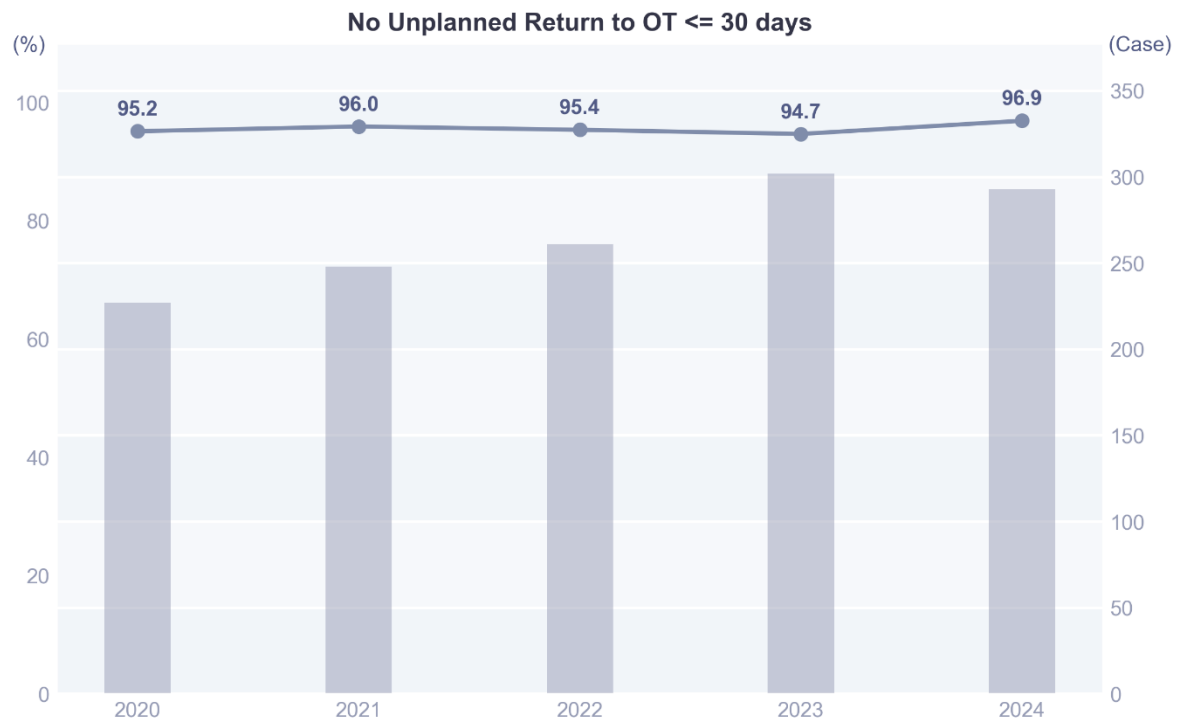
In Post Op Complication rates within 30 days of discharge have improved since 2021.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

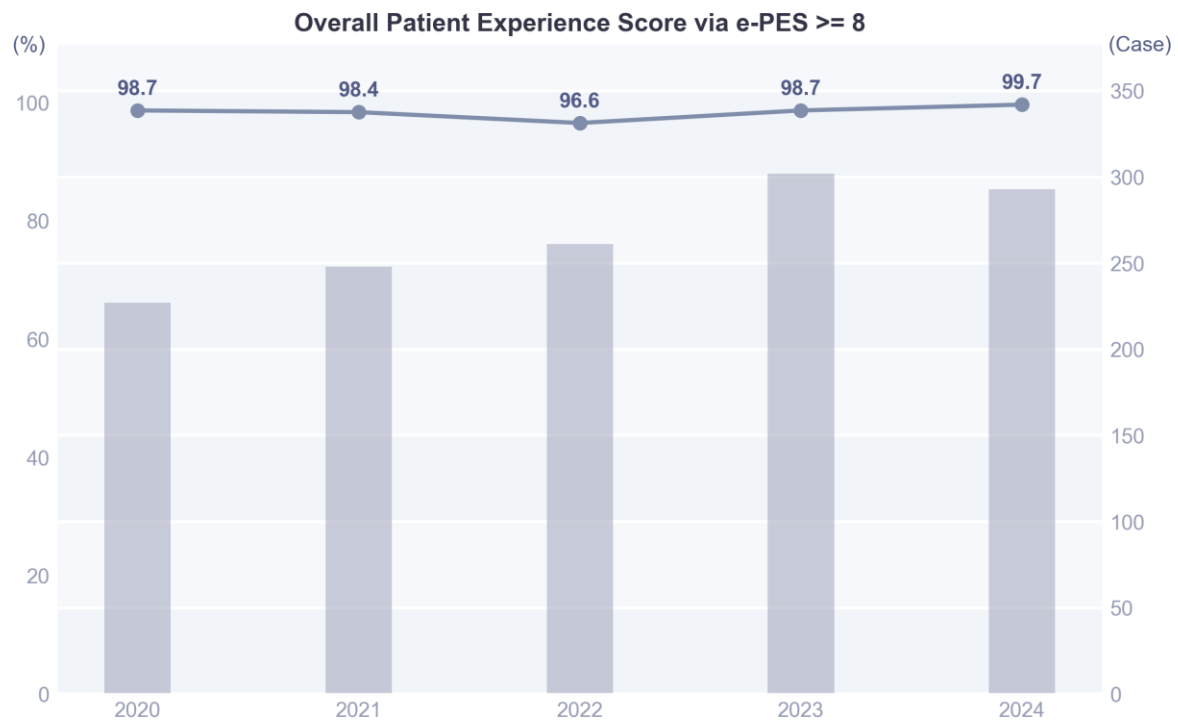
No Unplanned Return to OT rates within 30 days of discharge are stable and improved in 2024

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Patient Experience Score  $\geq 8$  is relatively constant throughout the years.

## Laparoscopic Cholecystectomy (Non-Emergency)

### Number of Patients with Laparoscopic Cholecystectomy

#### Definitions

**LAPAROSCOPIC CHOLECYSTECTOMY** is a minimally invasive surgical procedure to remove the gallbladder, commonly for symptomatic gallstones or biliary colic.

#### PATIENTS WITH LAPAROSCOPIC CHOLECYSTECTOMY:

Collected (A) By MOH TOSP Code (Single or multiple TOSPs): LF/SF704G, LF/SF706G, LF/SF801G

(B) Inclusion criteria: Elective cases only (by "Priority" of TOSP codes)

(C) Exclusion criteria: 1) Absconded/AOR discharge Aged < 18 years; 2) Emergency Inpatient admission type

#### Results



#### Interpretation

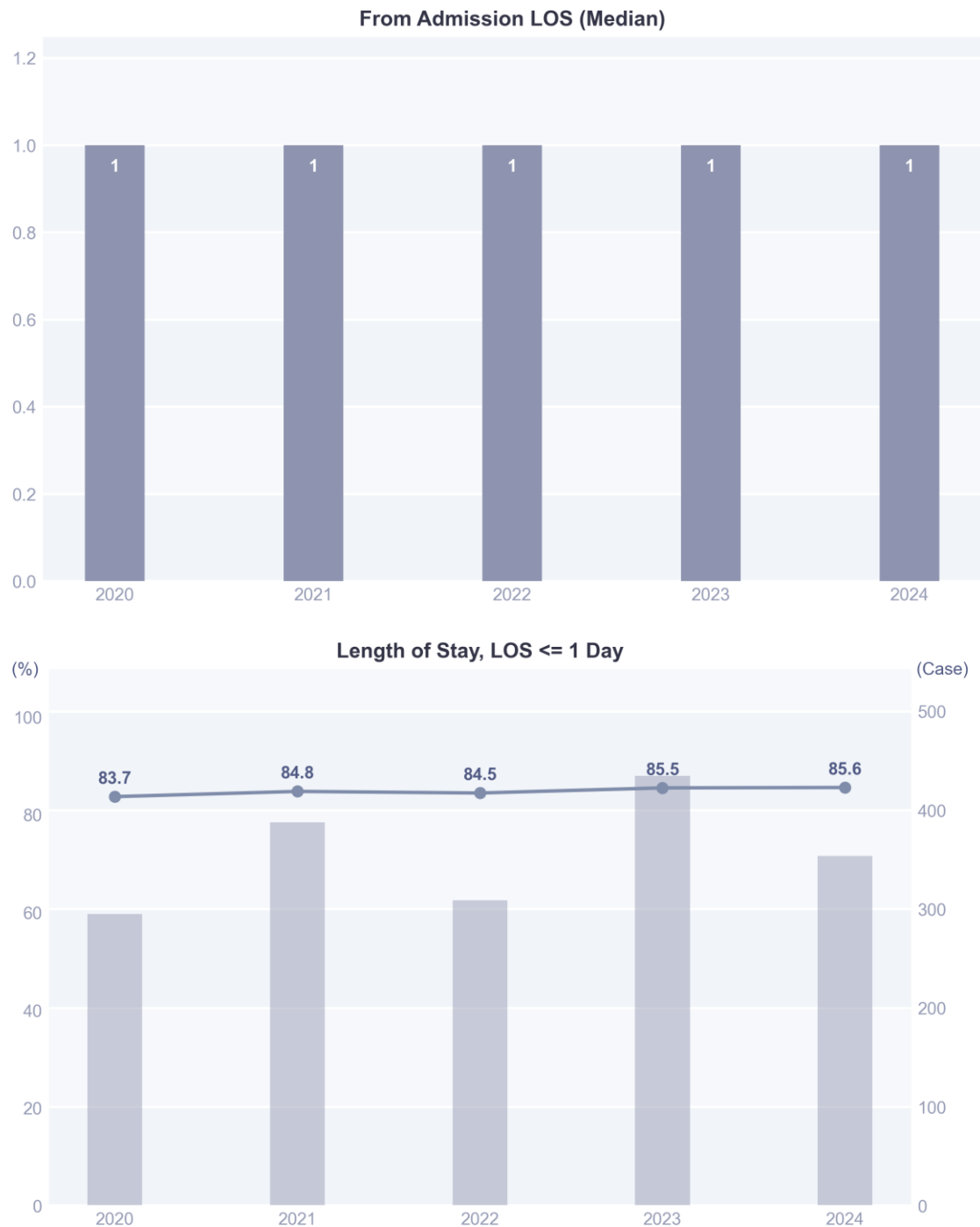
The number of laparoscopic cholecystectomy cases in NUH was fluctuate over the five years from 2020 to 2024, from 295 to 435 cases.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Generally, more than 80% of patients were able to return home within one day.

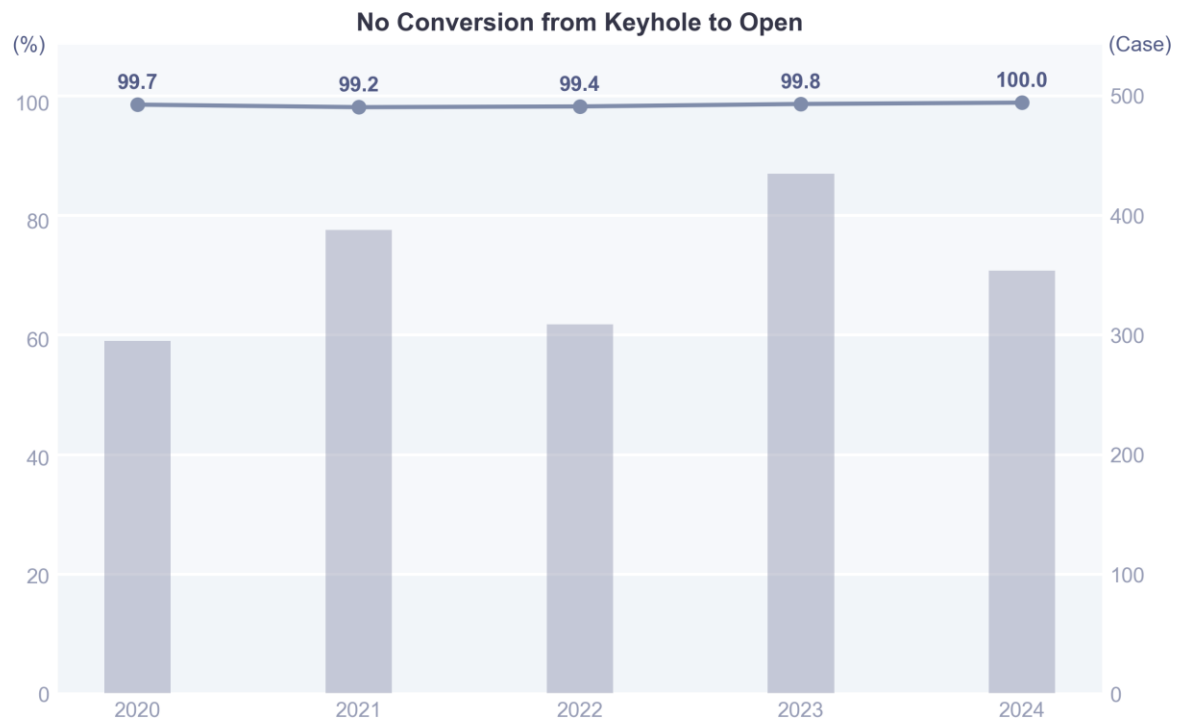


## No Conversion from Laparoscopic to Open Surgery

### Definitions

Patients undergoing laparoscopic surgery should not require intraoperative conversion to open surgery. This measure reflects surgical proficiency and appropriate case selection.

### Results



### Interpretation

Within five years, there were some cases converted from keyhole to open.

## No Intensive Care Unit (ICU) Transfer

### Definitions

Patients should not be transferred to Intensive Care Unit (ICU) during admission.

### Results



### Interpretation

Patients receive consistent care and were not being transferred to ICU during admission.

## No Post-operative Complications within 30 Days

### Definitions

Patients should not have post-operative complications during the hospital admission and within 30 days from initial discharge.

Post-operative complication is defined as 1) secondary diagnosis of current admission that does not present on admission, or 2) primary or secondary diagnosis of subsequent readmissions within  $\leq 30$  days of initial discharge).



### Interpretation

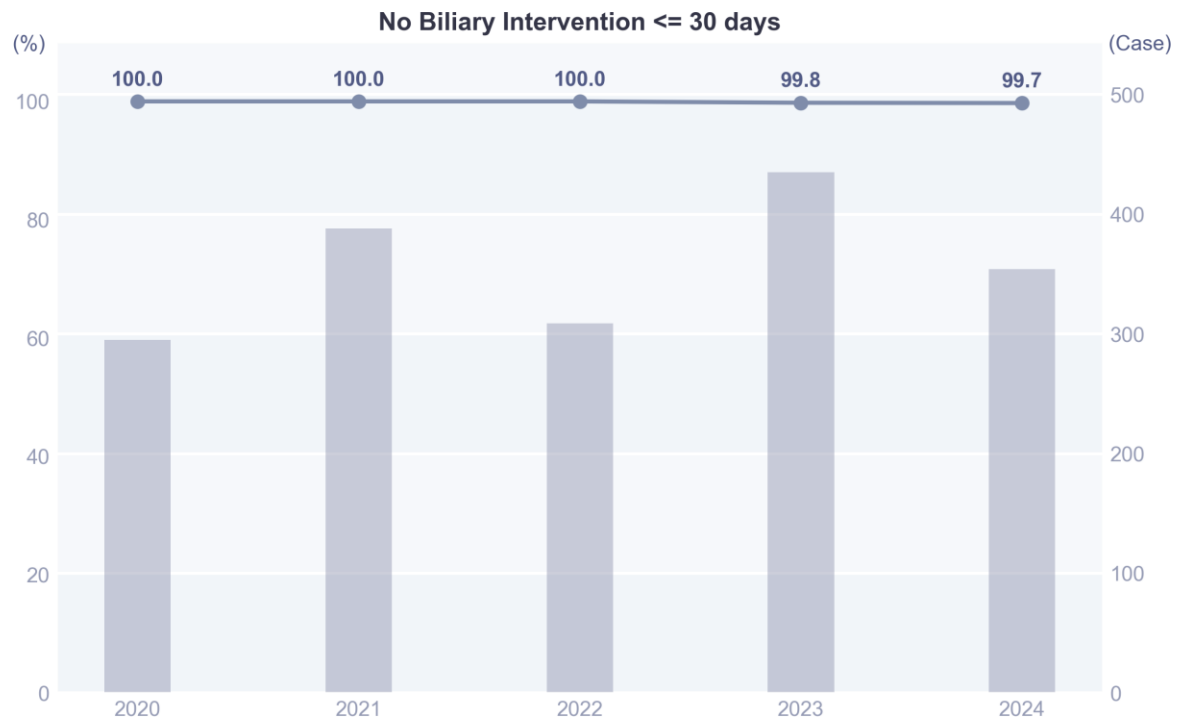
All cause post-operative complication rate within 30 days was 4.2% ('No Post Op Complication – 95.8%) in 2024 which was slightly higher than previous years.

## No Biliary Intervention within 30 Days post-cholecystectomy

### Definition

Biliary intervention i.e., ERCP/PTC/Surgery/Pancreatitis under emergency admission within 30 days post-cholecystectomy

### Results



### Interpretation

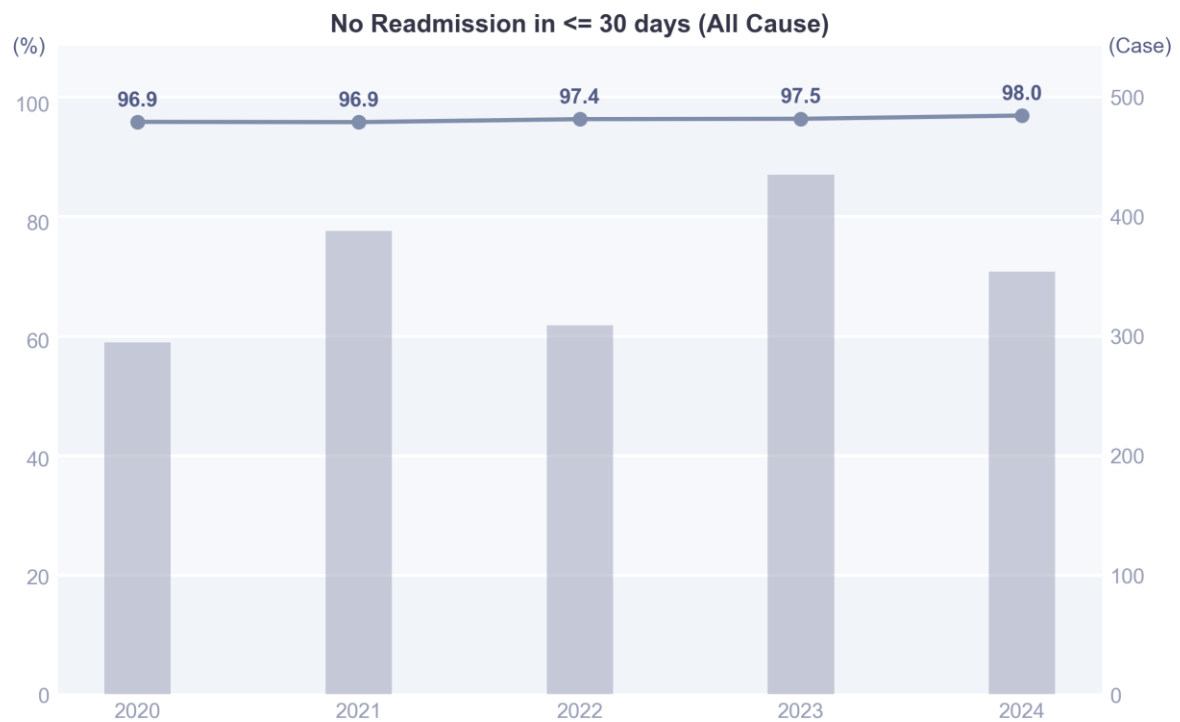
The rate of 'No Biliary Intervention <=30 days' was relatively high.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

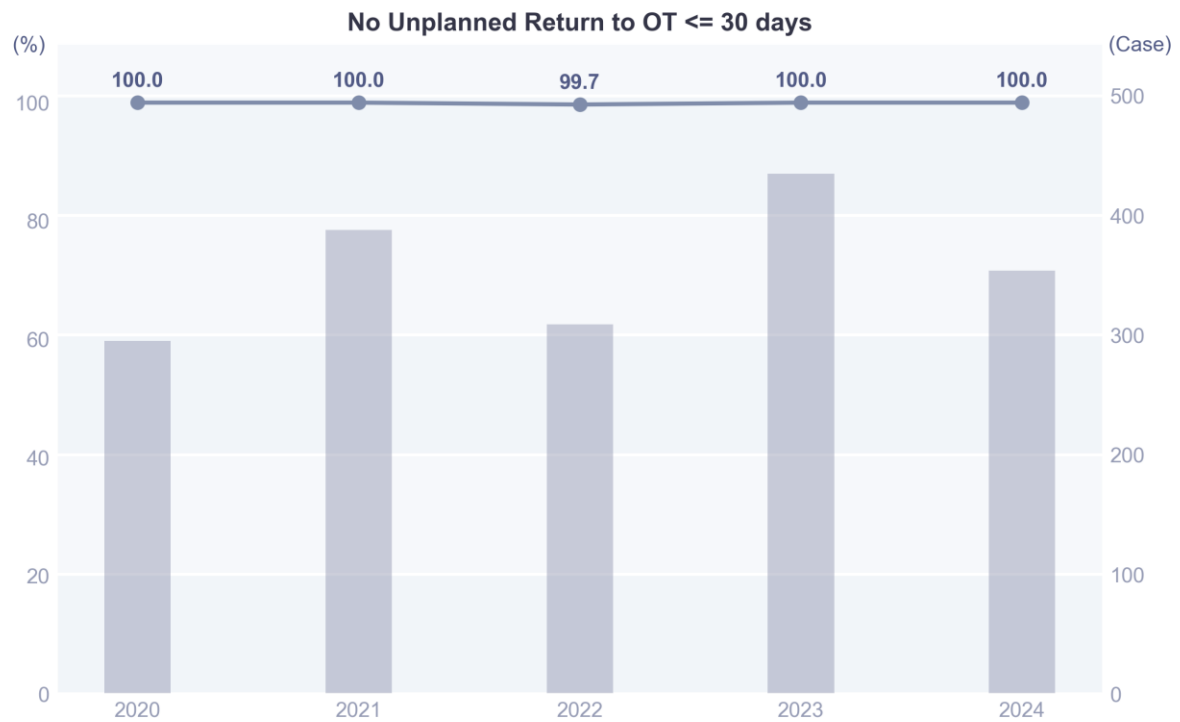
The rate of emergency readmission within 30 days due to any cause was 2% to 3% in last five years.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

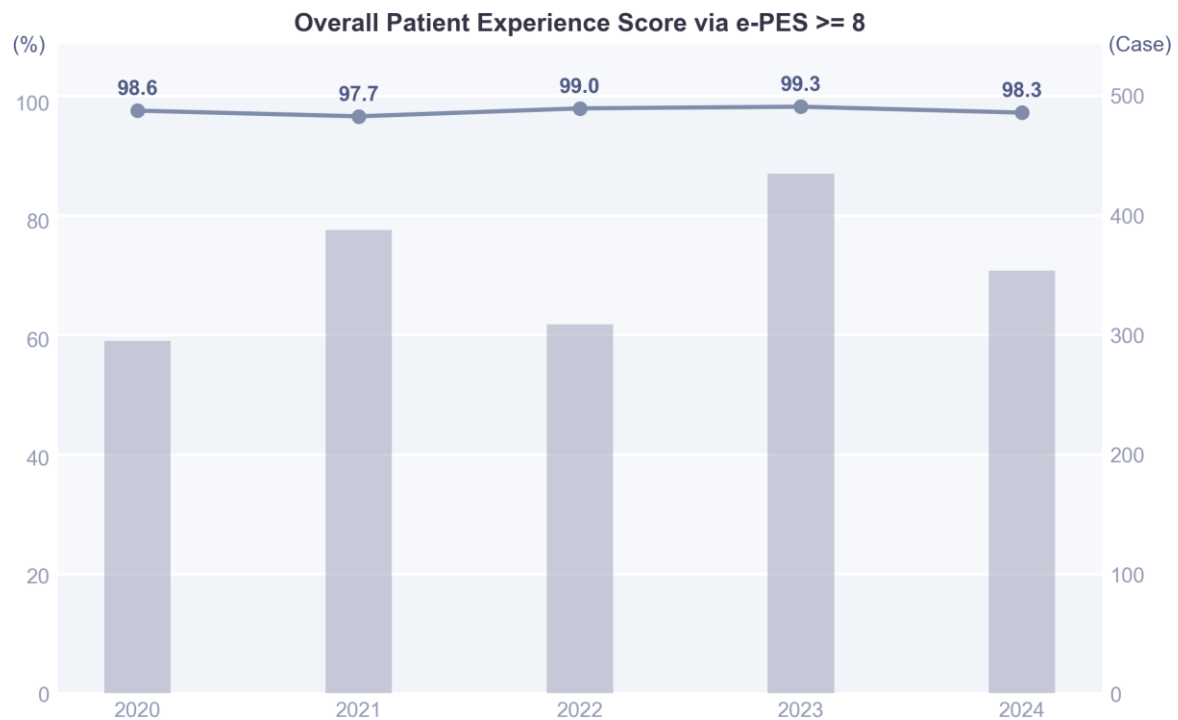
The inpatient care was consistent and rate of 'No return to OT <=30 days' was high.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Percentage of patient experience score  $\geq 8$  was high with more than 95% over the five years.

## Tonsillectomy

### Number of Patients with Tonsillectomy

#### Definitions

**TONSILLECTOMY** is the surgical removal of the palatine tonsils, typically indicated for recurrent tonsillitis or obstructive sleep apnoea.

#### PATIENTS WITH TONSILLECTOMY:

Collected by (A) MOH TOSP Code (Single only): SM705T & LM705T

(B) Exclusion criteria: Aged < 18 years

#### Results



#### Interpretation

From 2020 to 2023, there is a noticeable increase in case volume, peaking in 2023 with 104 cases. However, in 2024, there is a decrease to 87 cases.

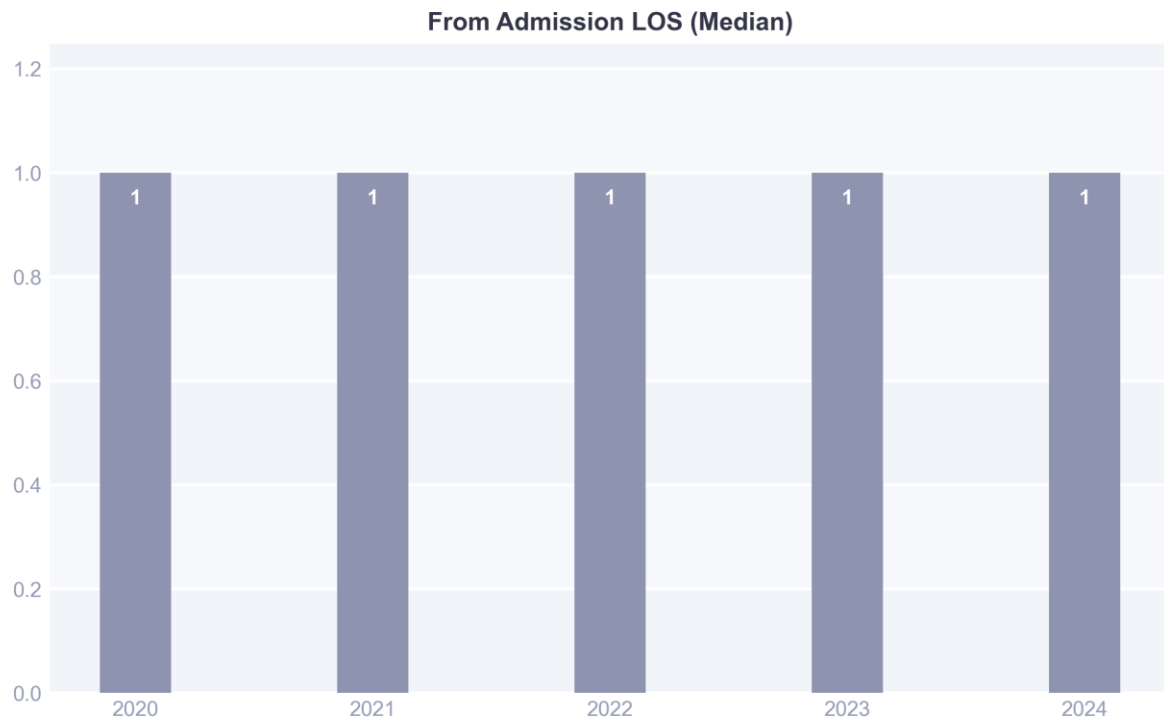


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median Length of Stay for Tonsillectomy (Adult) cases have maintained at 1 day for the last five years.

## No LOS > 1 Day

### Definitions

No patients to stay > 1 day

### Results



### Interpretation

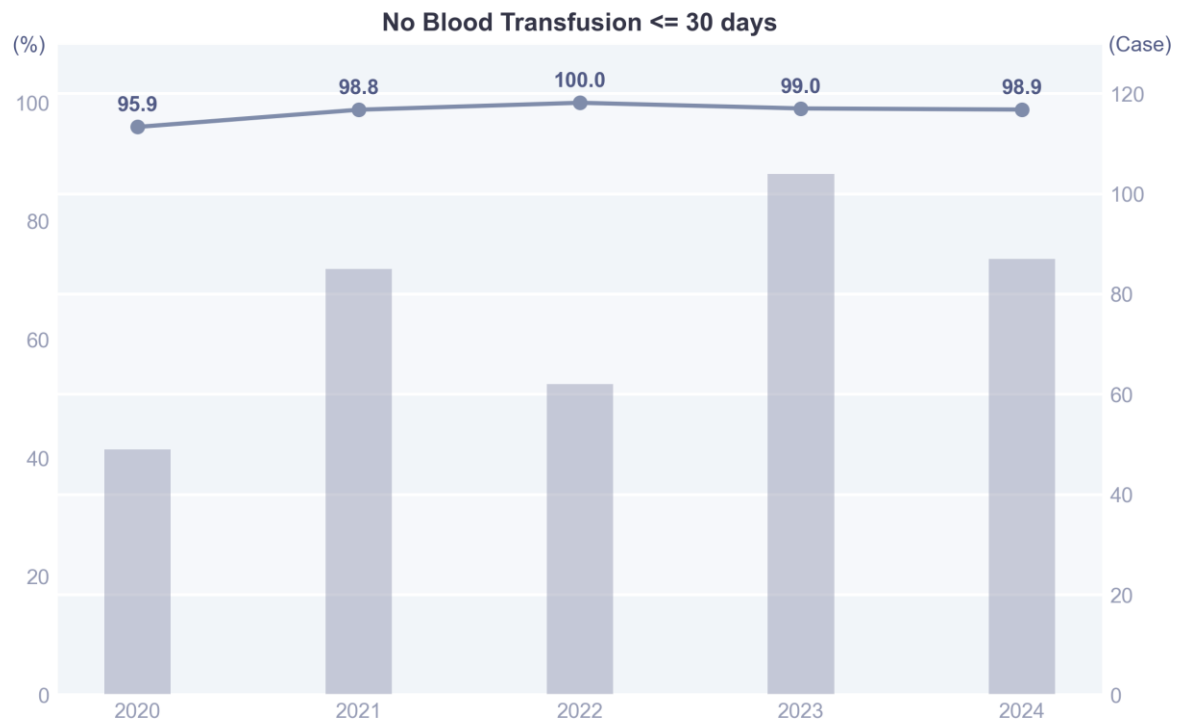
In 2020, 98.0% of patients had a hospital stay of 1 day or less. In 2021, this slightly dropped to 96.8%. In 2022, performance improved to 98.4%. The rate reached and maintained 100% in 2023 and 2024, indicating that all patients were discharged within 1 day.

## No Blood Transfusion

### Definitions

Patients should not receive blood transfusion during admission.

### Results



### Interpretation

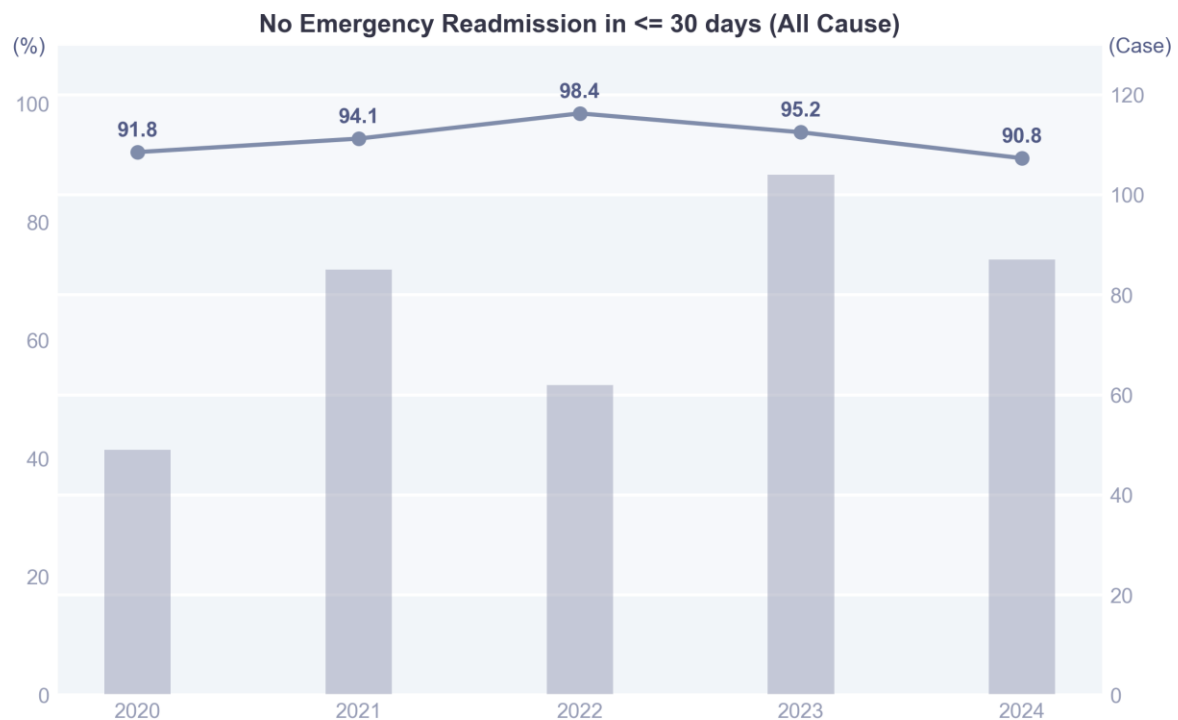
The percentage of “No Blood Transfusion ≤ 30 days” shows a general upward trend from 2020 (95.9%) to 2022 (100.0%). This indicates an improvement in performance rate over these years. The year 2022 marks the peak at 100.0%, indicating that the highest level of performance was achieved during this year. There are slight declines in 2023 (99.0%) and 2024 (98.9%).

## No Emergency Readmission Within 30 Days Post-Discharge (All Cause)

### Definitions

Patients should not be readmitted to the hospital through the emergency department for any reason within 30 days from their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

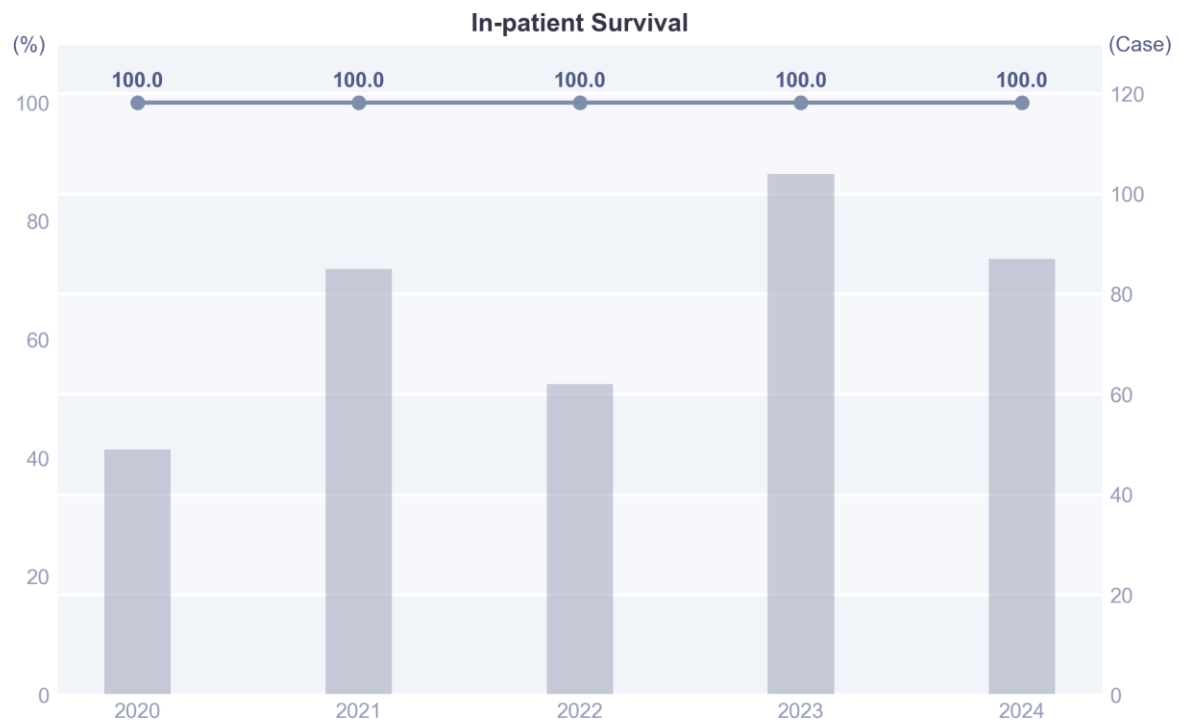
The percentage metric shows a general upward trend from 2020 (91.8%) to 2022 (98.4%). This indicates an improvement in performance or success rate over these years. The percentage metric shows a general upward trend from 2020 (91.8%) to 2022 (98.4%). This indicates an improvement in performance or success rate over these years. After reaching 98.4% in 2022, there are declines in 2023 (95.2%) and 2024 (90.8%).

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

The percentage of "In-patient Survival" remains perfectly consistent at 100% for all five years.

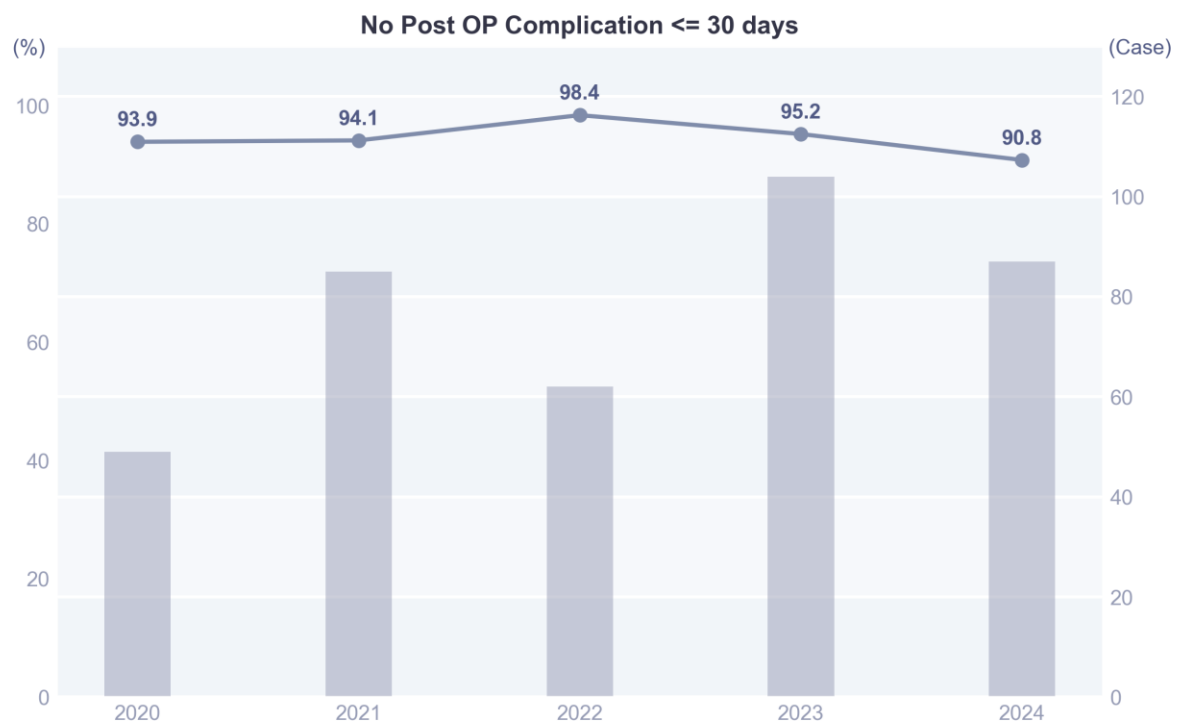
## No Post-operative Complications within 30 Days

### Definitions

Patients should not have post-operative complications during the hospital admission and within 30 days from initial discharge.

Post-operative complication is defined as 1) secondary diagnosis of current admission that does not present on admission, or 2) primary or secondary diagnosis of subsequent readmissions within  $\leq 30$  days of initial discharge).

### Results



### Interpretation

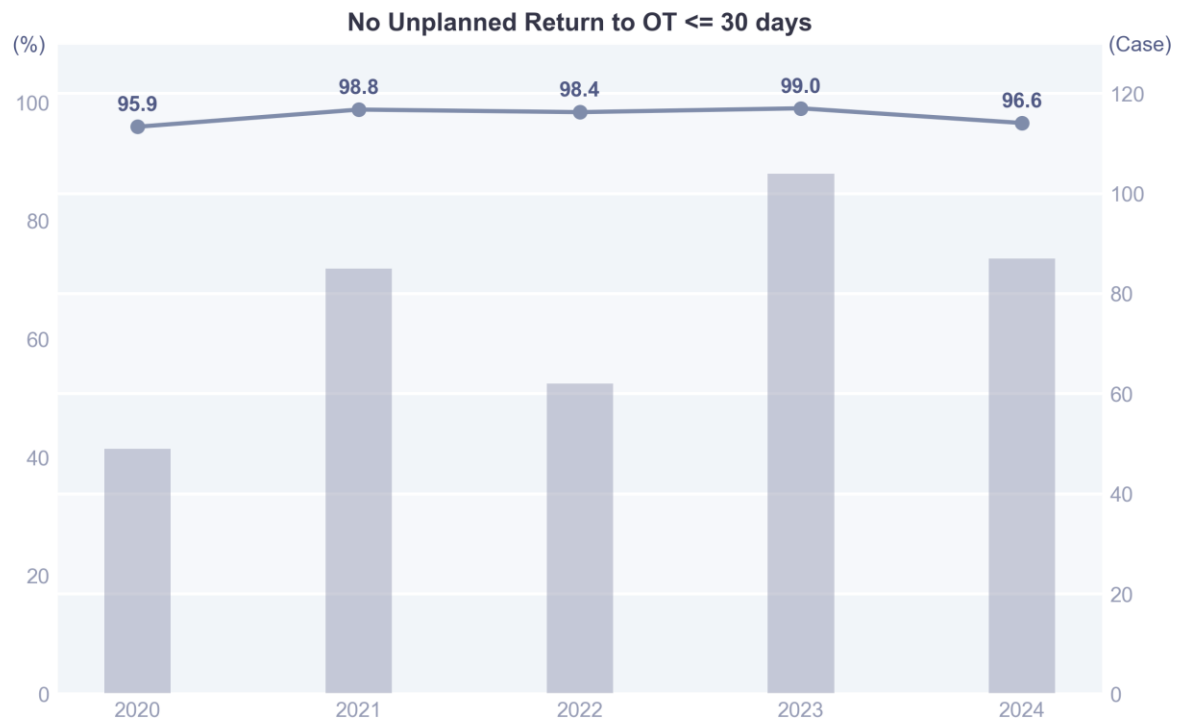
The percentage metric shows a general upward trend from 2020 (93.9%) to 2022 (98.4%). This indicates an improvement in performance rate during this period. The year 2022 marks a high point at 98.4%, indicating that performance was nearing optimal levels during this year. After reaching 98.4% in 2022, there are declines in 2023 (95.2%) and 2024 (90.8%). While these values are still relatively high, they indicate a decrease in performance compared to the peak year.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

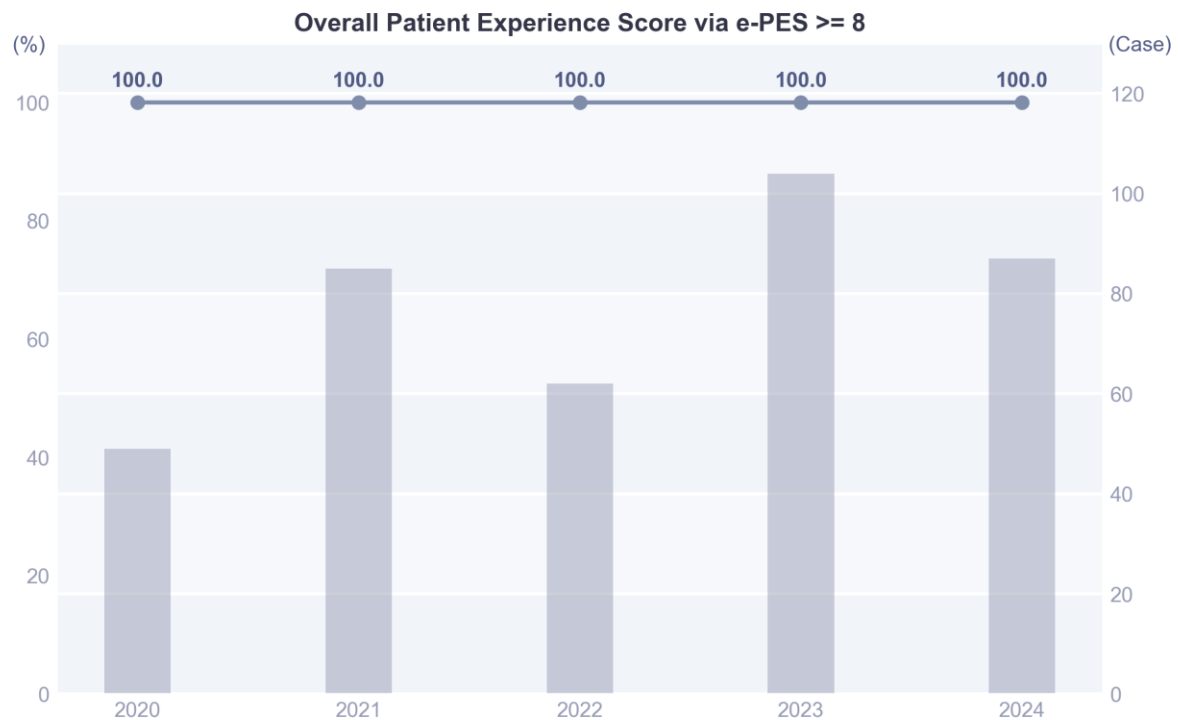
The percentage metric shows a general upward trend from 2020 (95.9%) to 2021 (98.8%). This indicates an improvement in performance rate during this period. In 2022, the percentage slightly decreases to 98.4%, but it remains high, indicating that performance is still strong. The following year, 2023, sees a slight increase to 99.0%. In 2024, the percentage drops to 96.6%. While this is still a commendable performance level and stable with above 95% all five years.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

The rate of "Overall Patient Experience Score via e-PES  $\geq 8$ " remains perfectly consistent at 100% for all five years.



## Medicine

## Community Acquired Pneumonia (CAP)

### Number of Patients with Community Acquired Pneumonia (CAP)

#### Definitions

**COMMUNITY-ACQUIRED PNEUMONIA (CAP)** refers to pneumonia that develops in individuals outside of a healthcare setting, such as a hospital. It is a common infection of the lungs, with various pathogens like bacteria, viruses, and fungi potentially causing the illness.

#### PATIENTS WITH CAP:

Collected by 1) Primary diagnosis codes: J100, J110, J120, J121, J122, J128, J129, J13, J14, J150, J151, J152, J153, J154, J155, J156 J157, J158, J159, J160, J168, J170, J171, J180, J181, J188, J189, J690

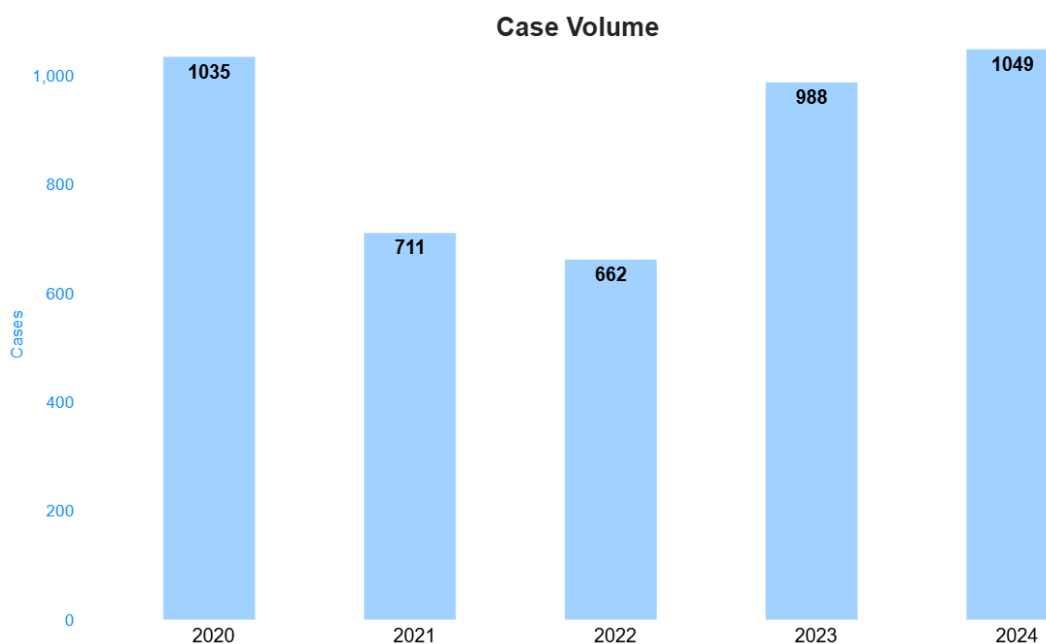
2) Department OU: General Medicine & Respiratory

3) Case type: AE turn IP

4) Age  $\geq$  18 years

5) Exclusion: COVID19 Diagnosis B972

#### Results



#### Interpretation

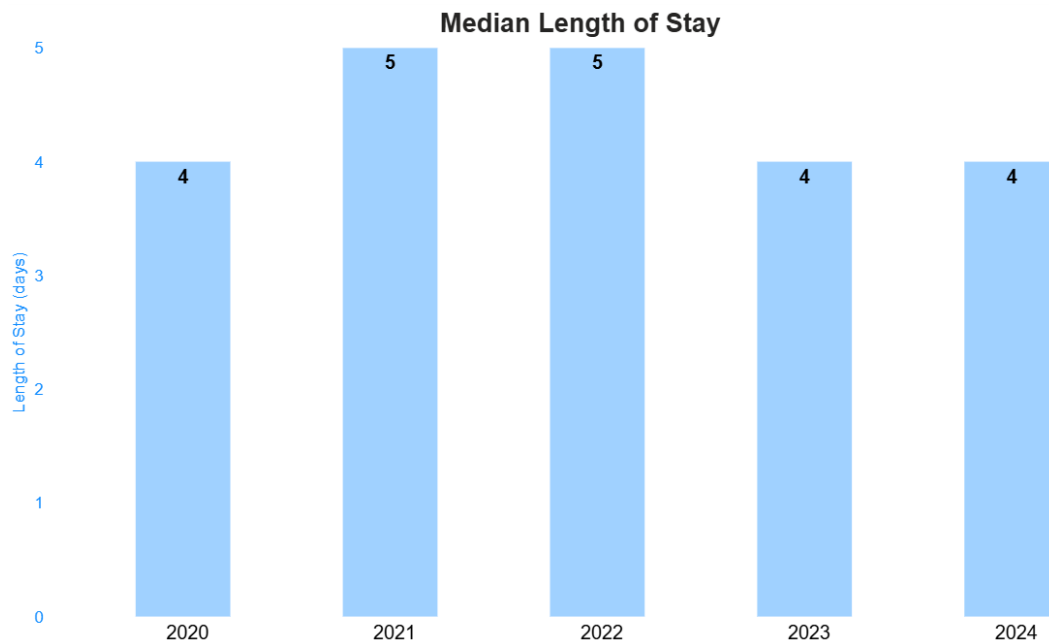
CAP case load is stable at around 1000 cases per year except during 2021 – 2022 where there is upsurge of COVID diagnosis concurrent in CAP patient.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

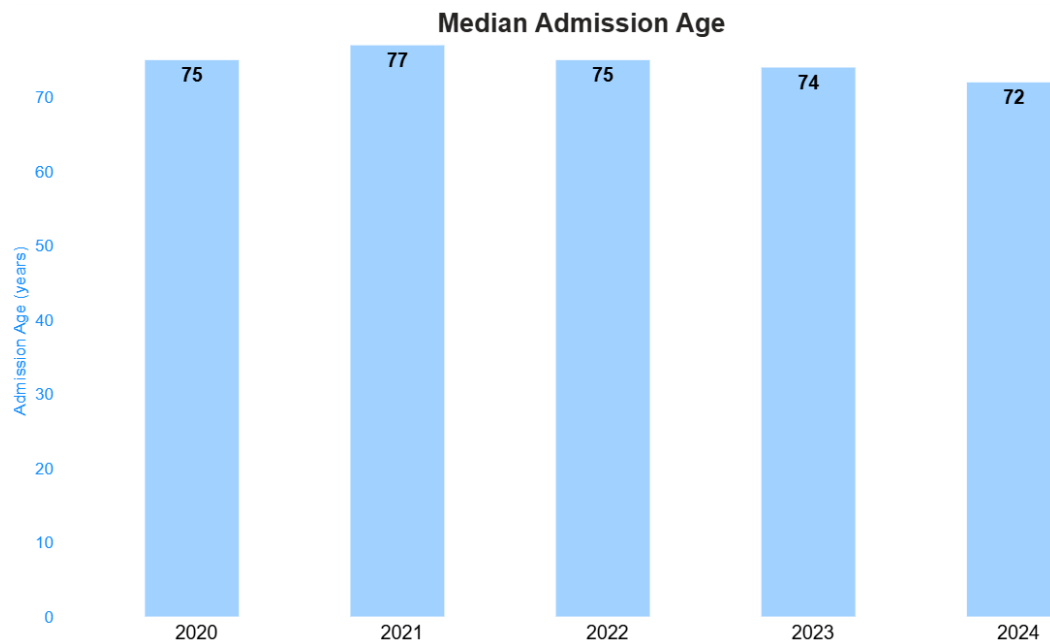
Median LOS is stable at 4 days except in 2021 and 2022 where there is compulsory of 2x negative swab test for all patients prior to discharge causing slightly longer LOS.

## Admission Age

### Definitions

Age of the patient calculated at the point of admission during the specific encounter.

### Results



### Interpretation

Median Age is highest during 2021 at 77 years old and had been on declining trend since then. In 2024, median Age for CAP is 72 years old.

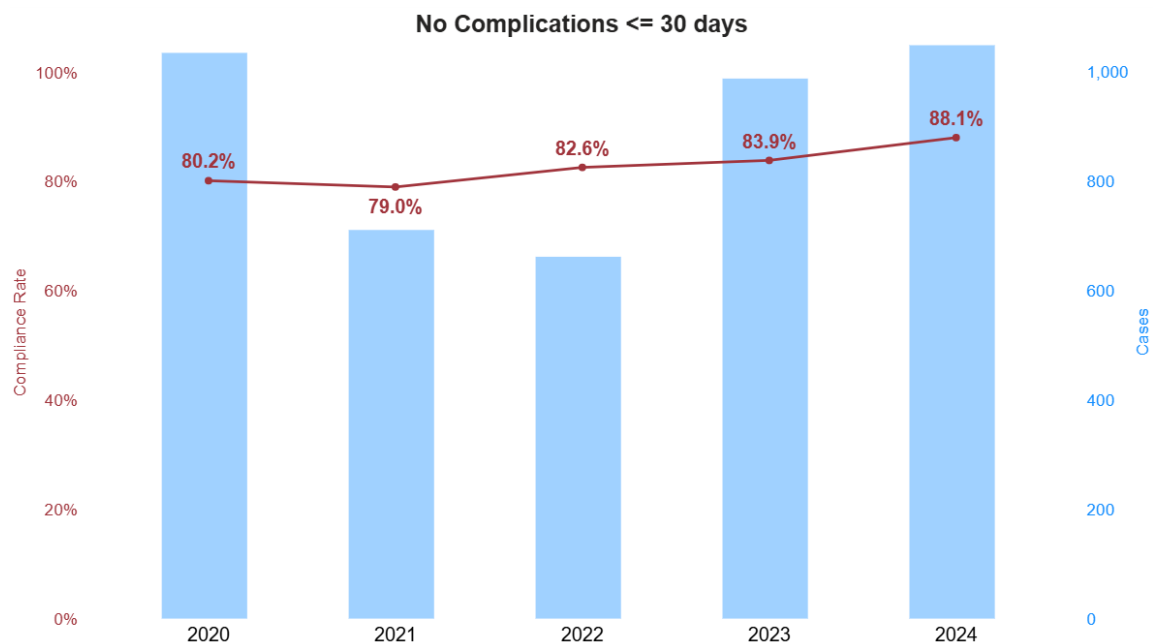
## No Complication within admission or 30 days from the initial discharge

### Definitions

**Complication** is defined as any record of secondary diagnosis during the current admission that does not present on admission, and primary of subsequent readmissions within 30 days from the initial discharge.

Patients should not have complications within the hospital admission or within 30 days of initial discharge.

### Results



### Interpretation

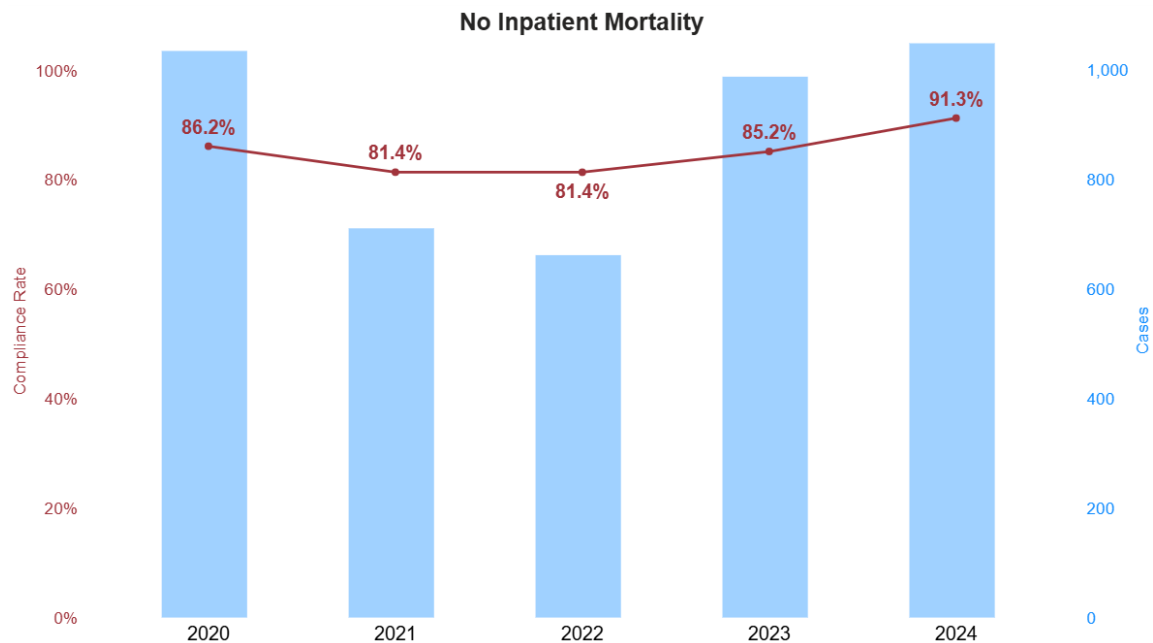
Percentage of patients having no complication within 30 days had been on increasing trend for the past 5 years

## No Inpatient Mortality (Inpatient Survival)

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

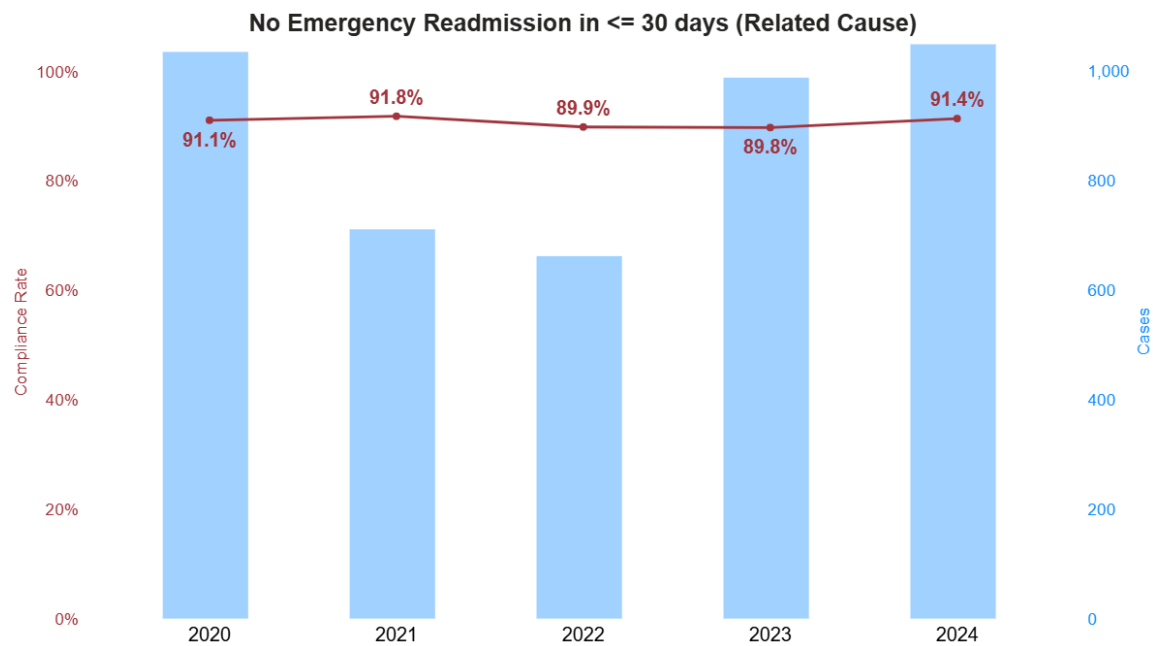
In-Hospital survival dropped during 2021 – 2022, however it recovered in 2023. In 2024, 91.4% of patients are discharged alive.

## No Emergency Readmission Within 30 Days (Related Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for related cause within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

Performance of this indicator are constant at 90% throughout the whole 5 years of data.

## Sepsis

### Number of Patients with Sepsis

#### Definitions

**SEPSIS** is a life-threatening condition where the body's response to an infection becomes extreme, leading to tissue and organ damage. It is a medical emergency that requires prompt treatment, as it can rapidly progress to septic shock, multiple organ failure, and even death.

#### PATIENTS WITH SEPSIS:

Collected from Base patient: Angus Sepsis

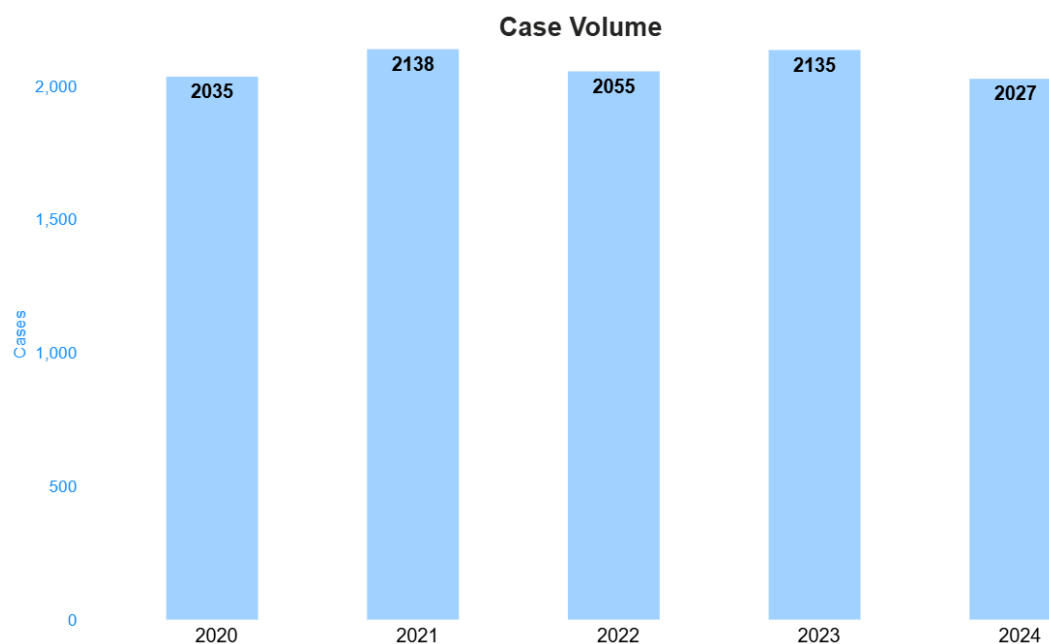
Angus Sepsis = If Organ dysfunction and Infection are TRUE OR If Explicit Sepsis is TRUE

Patients with either Antibiotic given within 48 hours OR Blood Culture taken within 48 hours

Excluding patients discharged from Extended Diagnostic Treatment Unit (EDTU) and Age < 16 years old

Exclude Patient with B972 Diagnosis

#### Results



#### Interpretation

Case load for Sepsis is around 2000 patients per year.

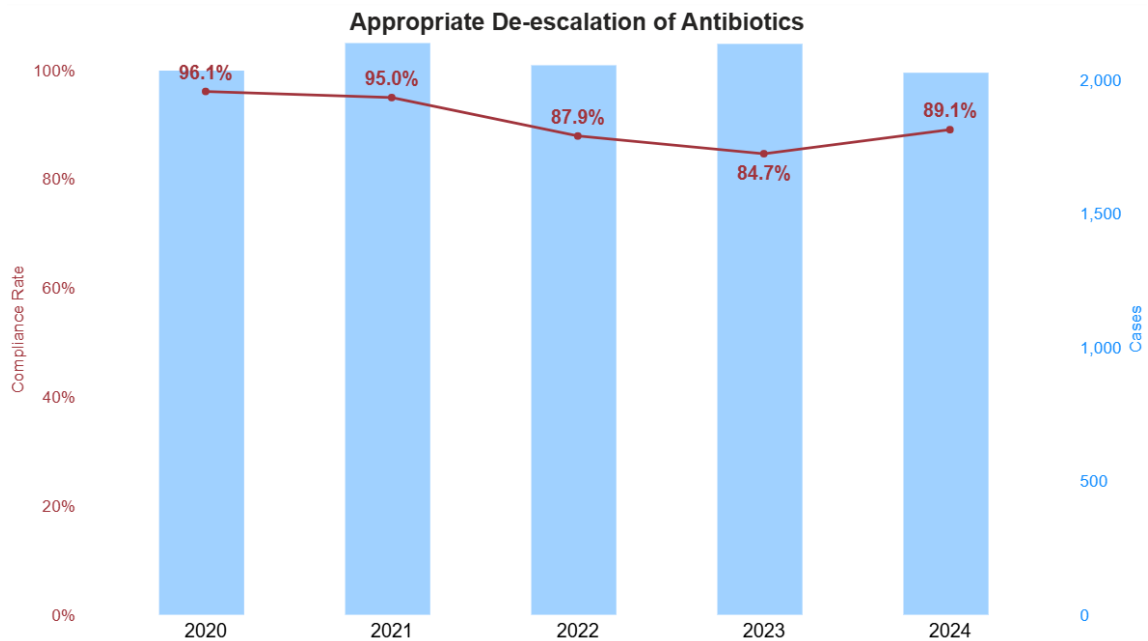


## Appropriate Antibiotic Use and De-escalation

### Definitions

**APPROPRIATE ANTIBIOTIC USE AND DE-ESCALATION:** Patient should be given Antibiotic appropriate to his/her condition and promptly de-escalated according to hospital's guidelines

### Results



### Interpretation

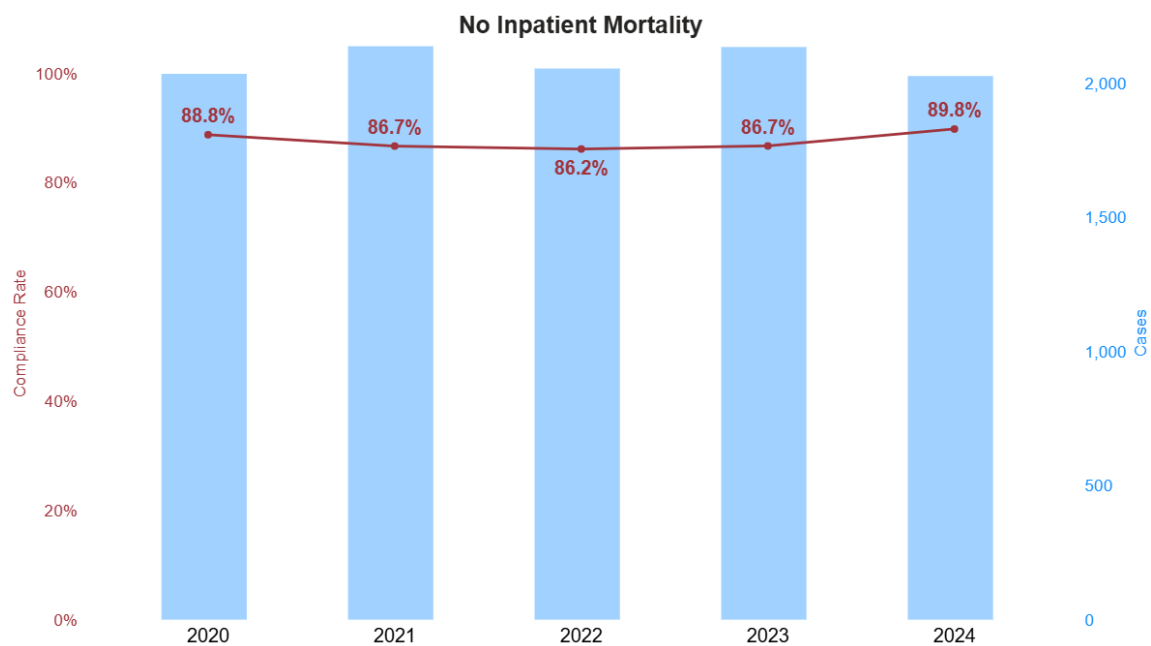
Appropriate antibiotic use and de-escalation showed decreasing compliance rate up to 2023 before bouncing to 89% in 2024.

## No Inpatient Mortality (Inpatient Survival)

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

In-hospital survival for Sepsis is around 86% to 90% which compares favourably to an international standard of 82%, based on a multicenter study from Australia and New Zealand.

## Chronic Obstructive Pulmonary Disease (COPD)

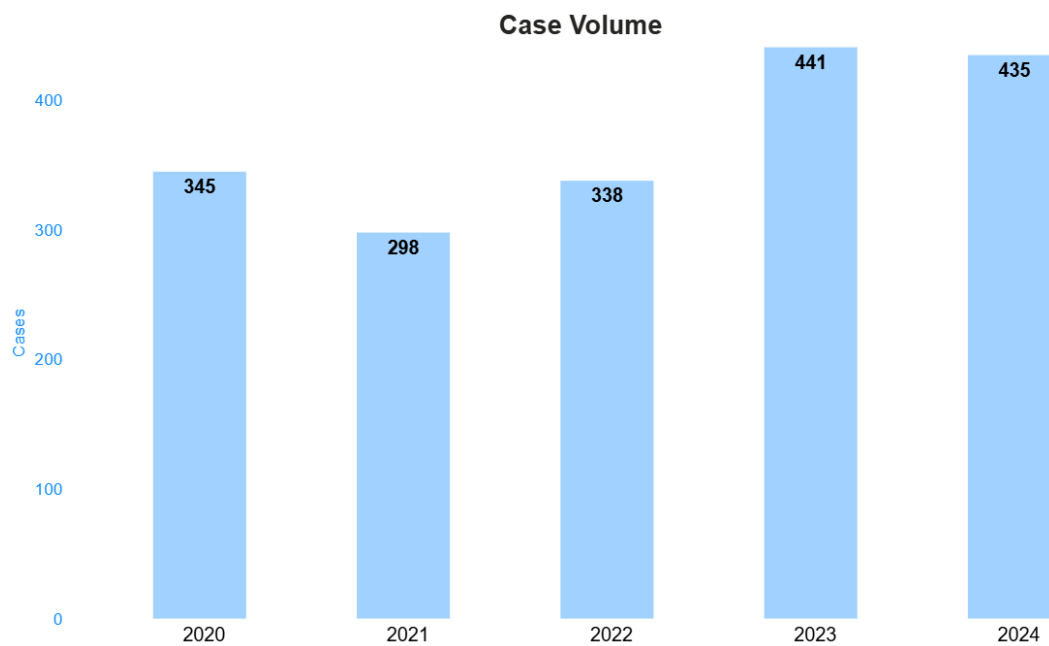
### Number of Patients with COPD

#### Definitions

**COPD**, or **CHRONIC OBSTRUCTIVE PULMONARY DISEASE**, is a progressive lung disease that makes breathing difficult due to damaged airways and reduced airflow.

**PATIENTS WITH COPD:** Collected by DRG Code: E65A and E65B

#### Results



#### Interpretation

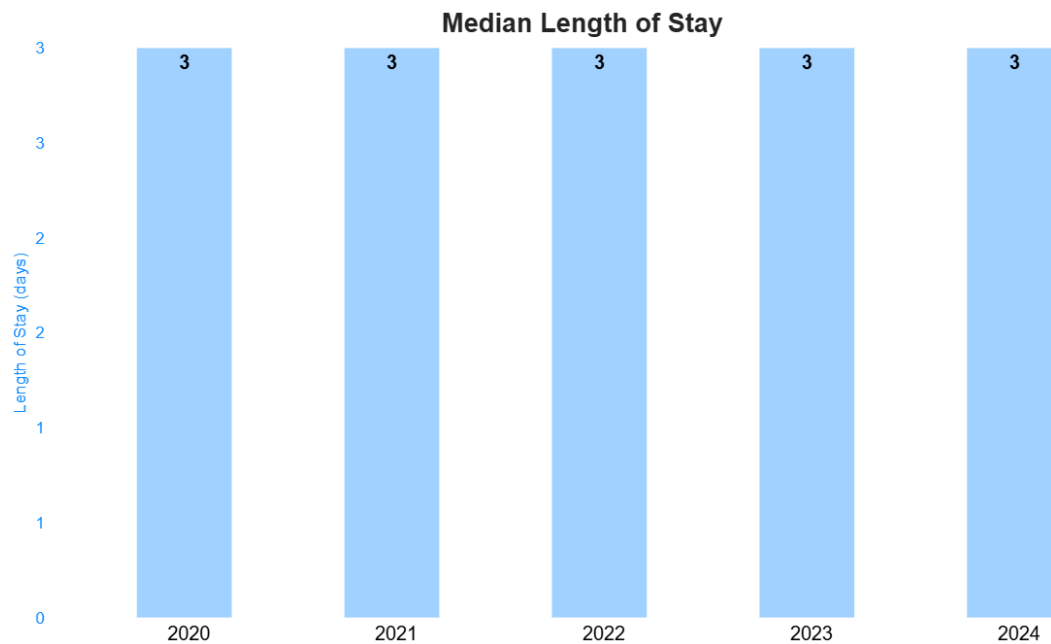
COPD case load is around 300 – 400 patients per year.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

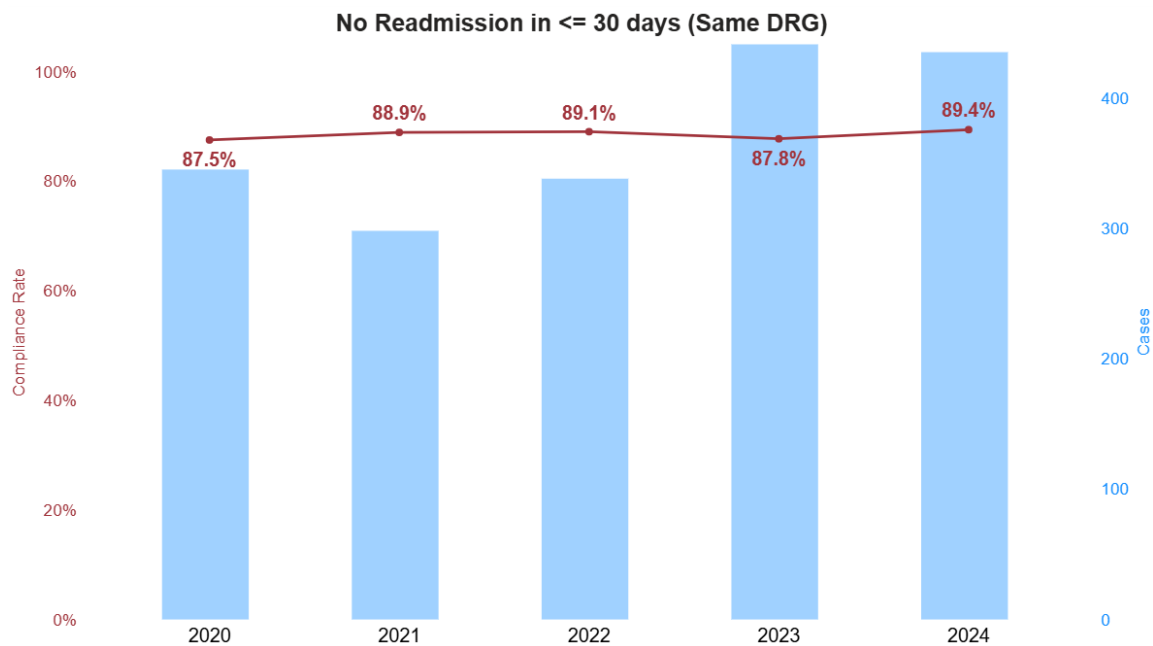
Median LOS are stable at 3 days throughout the whole 5 years

## No Emergency Readmission Within 30 Days (Same DRG)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

Performance of this indicator are constant at 87-89% throughout the whole 5 years of data.

## **Neuroscience**

## Stroke

### Number of Patients with Ischemic Stroke

#### Definitions

**ISCHEMIC STROKE** is defined as the sudden onset of a neurological deficit resulting from either cerebral ischemia. Stroke care quality is assessed through timely diagnosis, evidence-based treatment, and coordinated rehabilitation services to improve patient outcomes and reduce long-term disability.

**PATIENTS WITH STROKE:** Collected from Stroke Registry

#### Results



## From Admission Length of Stay

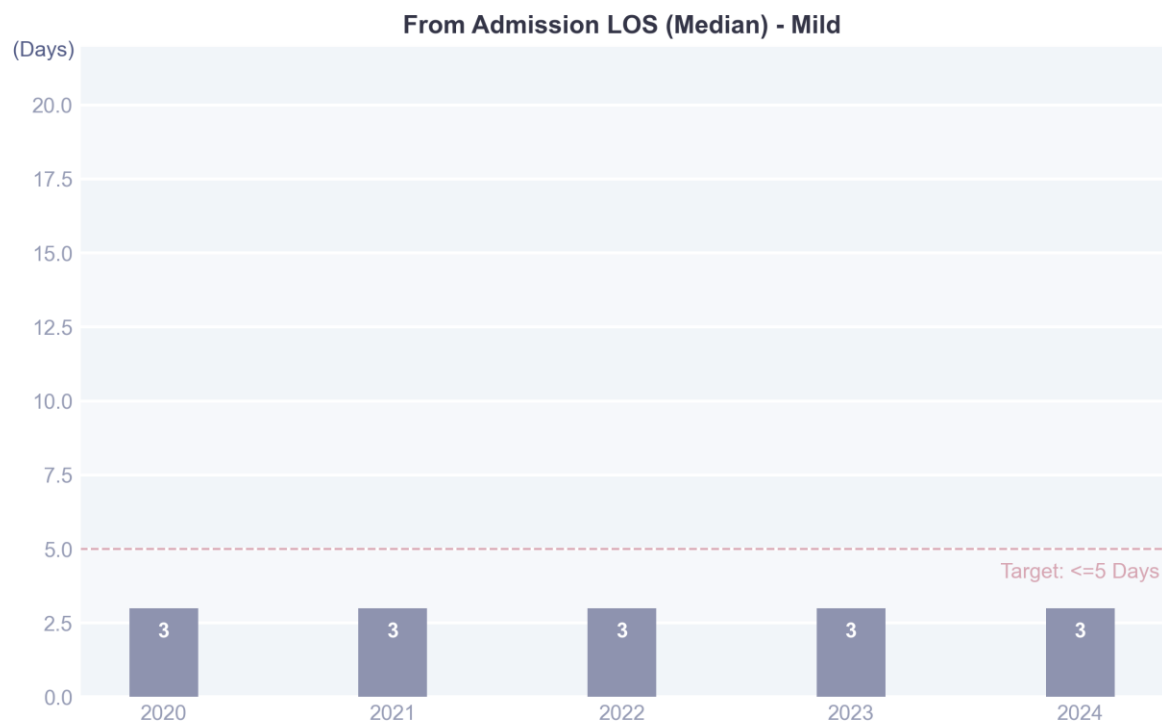
### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge to the rehabilitation centers. This measure reflects the overall duration of inpatient care.

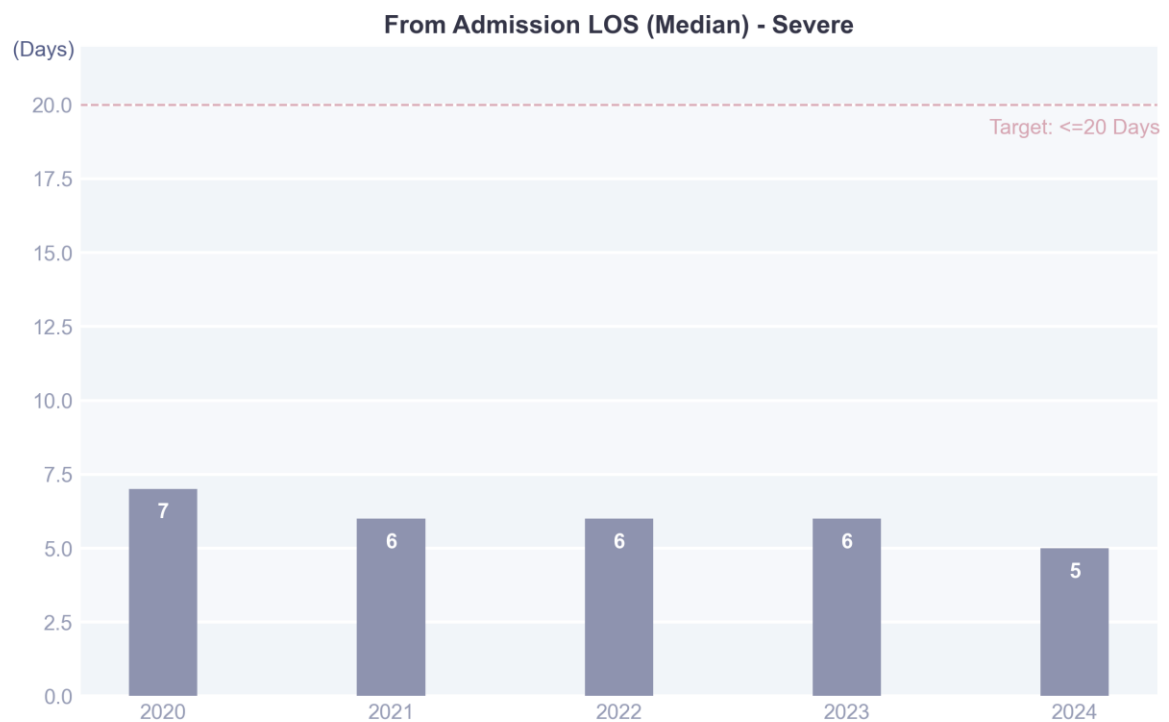
The length of stay for patients admitted with stroke should align with stroke severity as follows:

- Mild stroke: within 5 days
- Moderate stroke: within 10 days
- Severe stroke: within 20 days

### Results





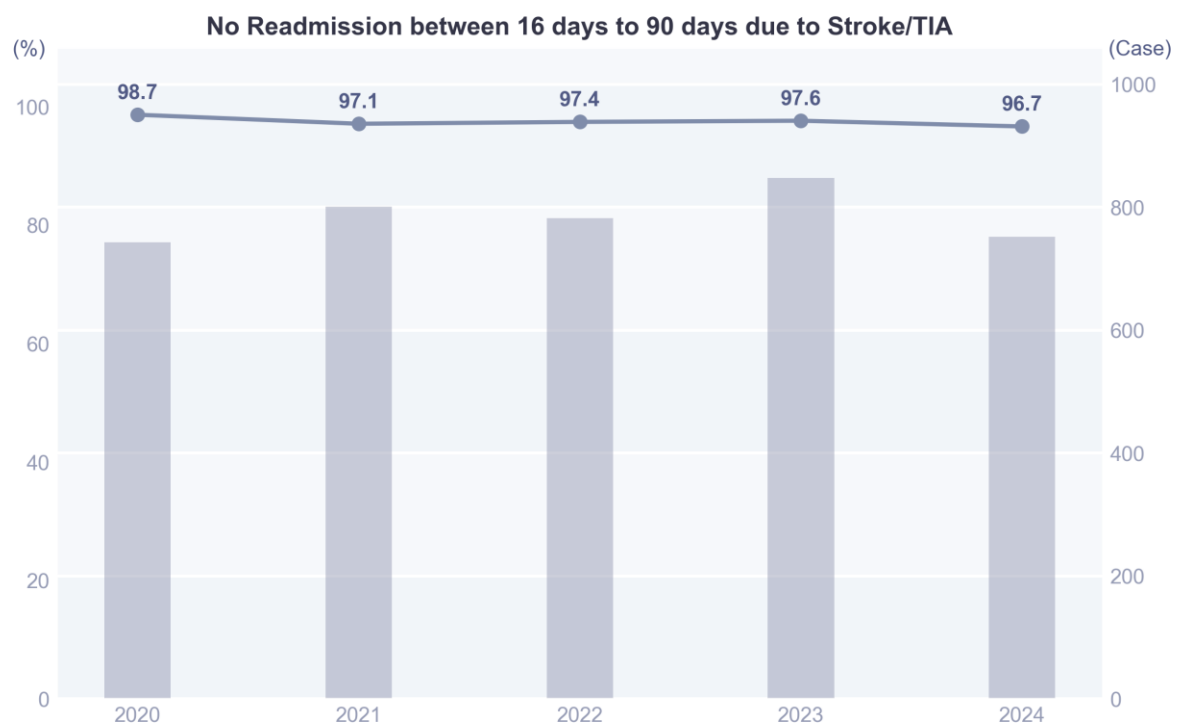
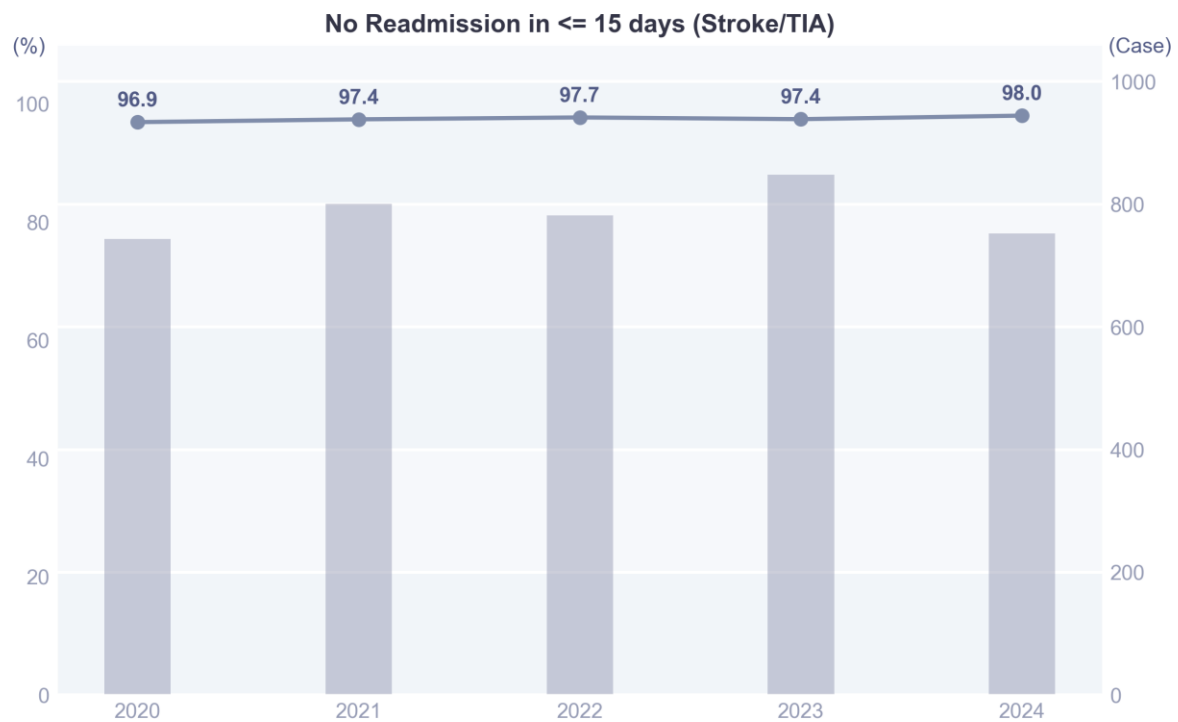


## No Emergency Readmission Within 15 (or 90) Days (Stroke/TIA)

### Definitions

Patients should not be readmitted to the hospital via the emergency department due to stroke or TIA within 15 (or 16- 90) days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



## Hyper Acute Stroke

### Number of Patients with Hyper Acute Stroke

#### Definitions

**HYPER ACUTE STROKE** refers to acute ischemic stroke.

**PATIENTS WITH HYPER ACUTE STROKE:** Collected from Stroke Registry

#### Results

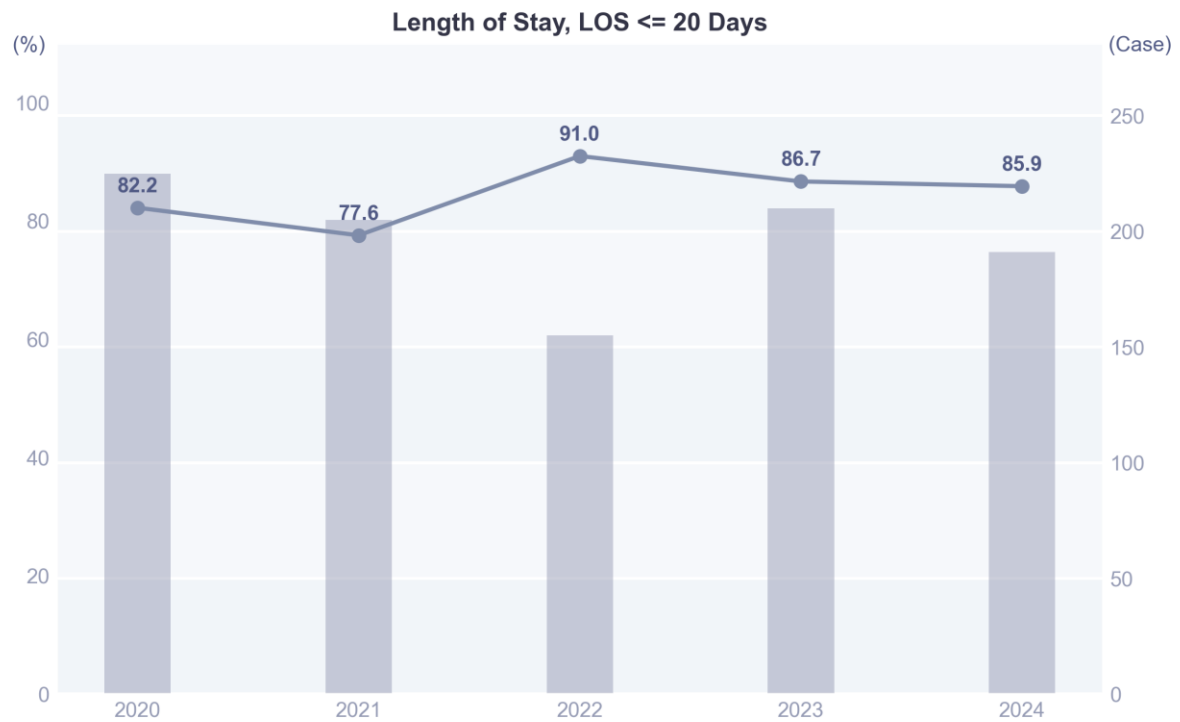


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge to rehabilitation centers. This measure reflects the overall duration of inpatient care.

### Results

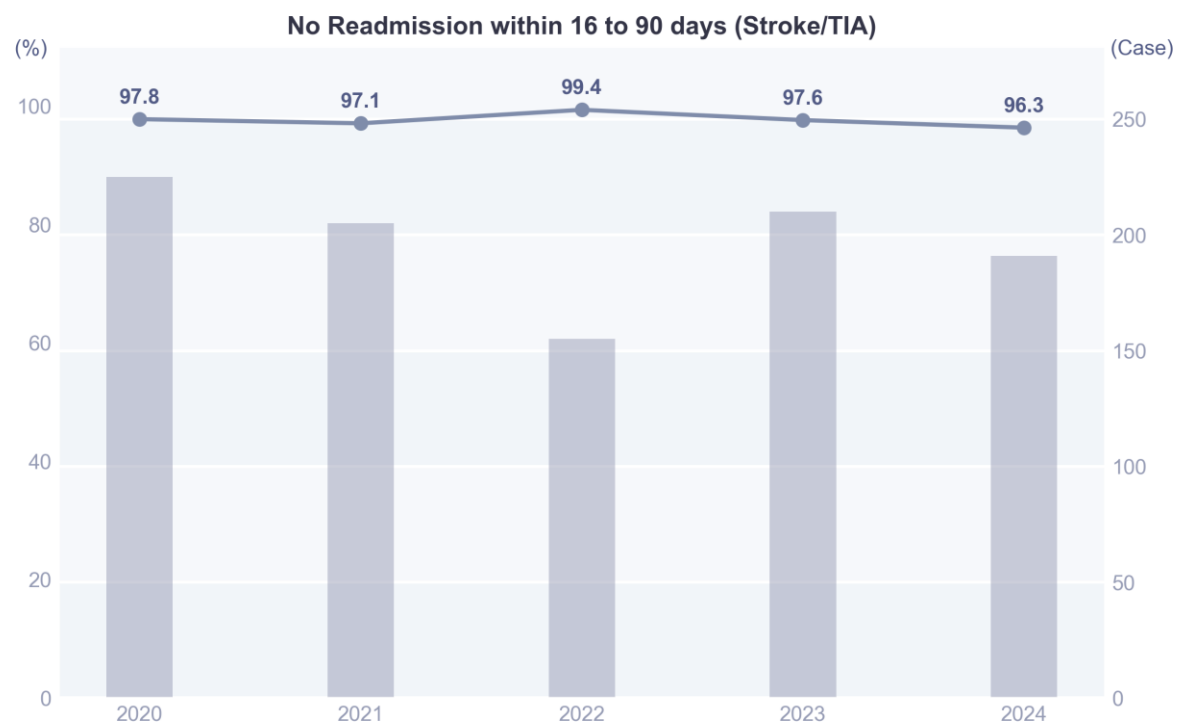
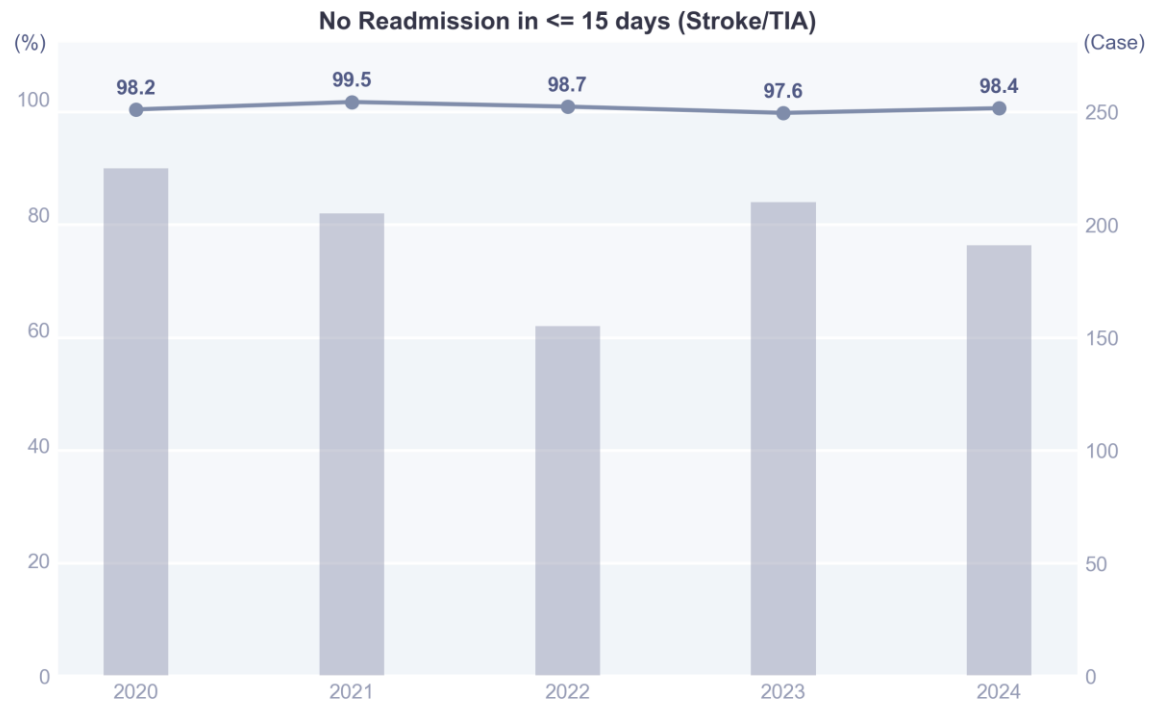


## No Emergency Readmission Within 15 (or 90) Days (Stroke/TIA)

### *Definitions*

Patients should not be readmitted to the hospital via the emergency department due to stroke or TIA within 15 (or 90) days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### *Results*



### Interpretation

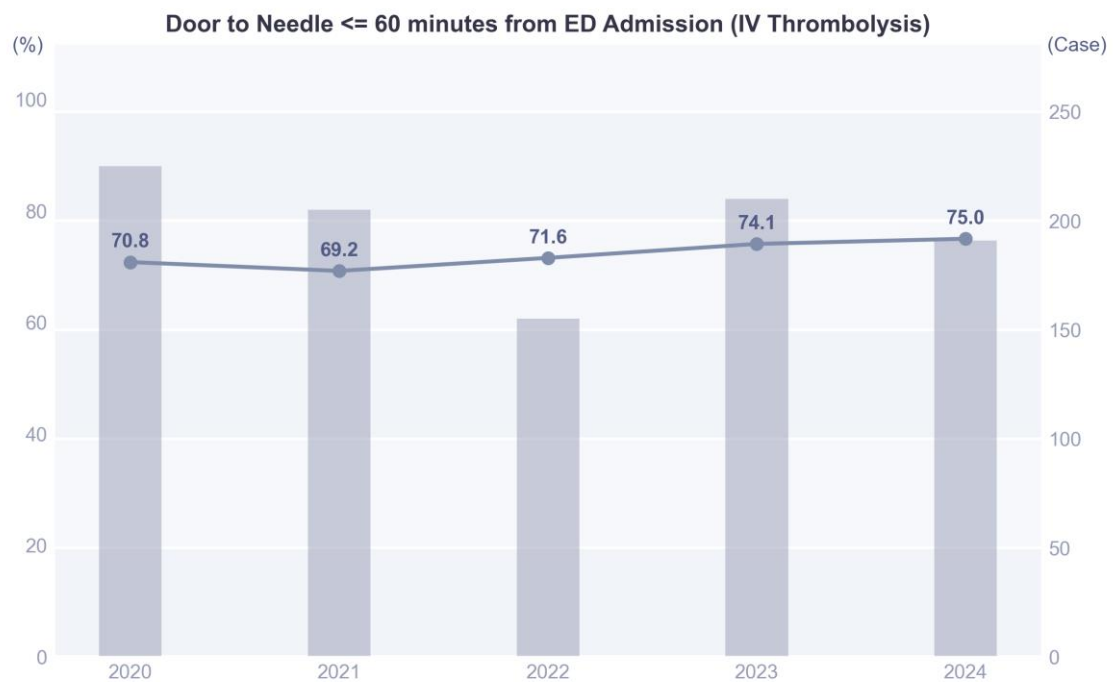
No readmission rates are stable across all years.

## Door-to-Needle Time for Intravenous Thrombolysis

### Definitions

For patients with hyperacute ischemic stroke eligible for intravenous thrombolysis, **DOOR-TO-NEEDLE TIME FOR INTRAVENOUS THROMBOLYSIS** refers to the time from **emergency department (ED) arrival** to the **administration of thrombolytic therapy (e.g., tPA)** and should be **60 minutes or less**, according to the international guideline by American Heart Association / American Stroke Association (AHA/ASA).

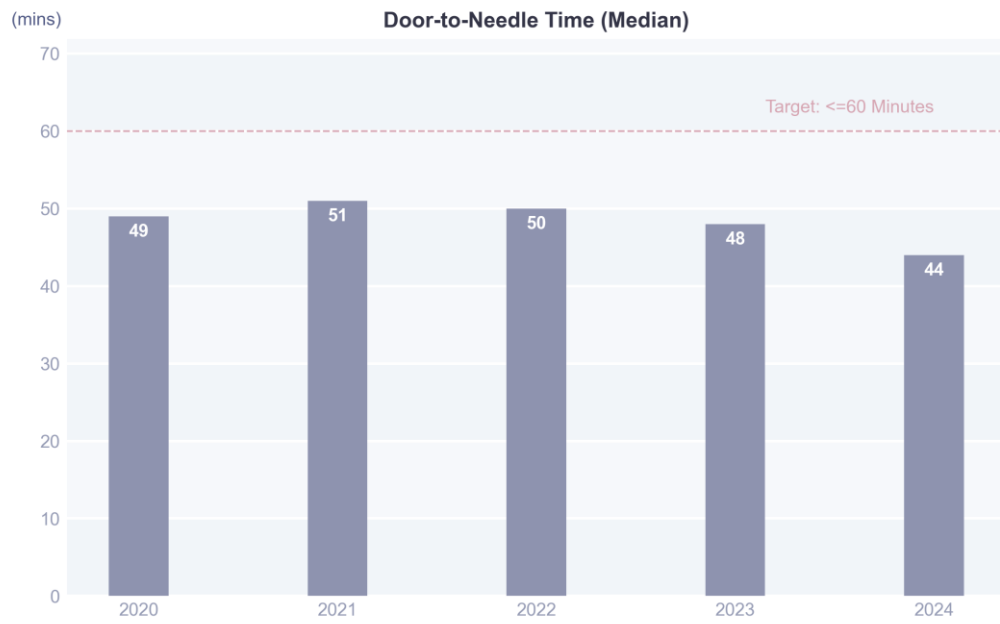
### Results



### Interpretation

Door to Needle time rates have improved since 2022.

NUH Outcome Book (Quality of Care by Conditions and Procedures)  
- Hyper Acute Stroke -



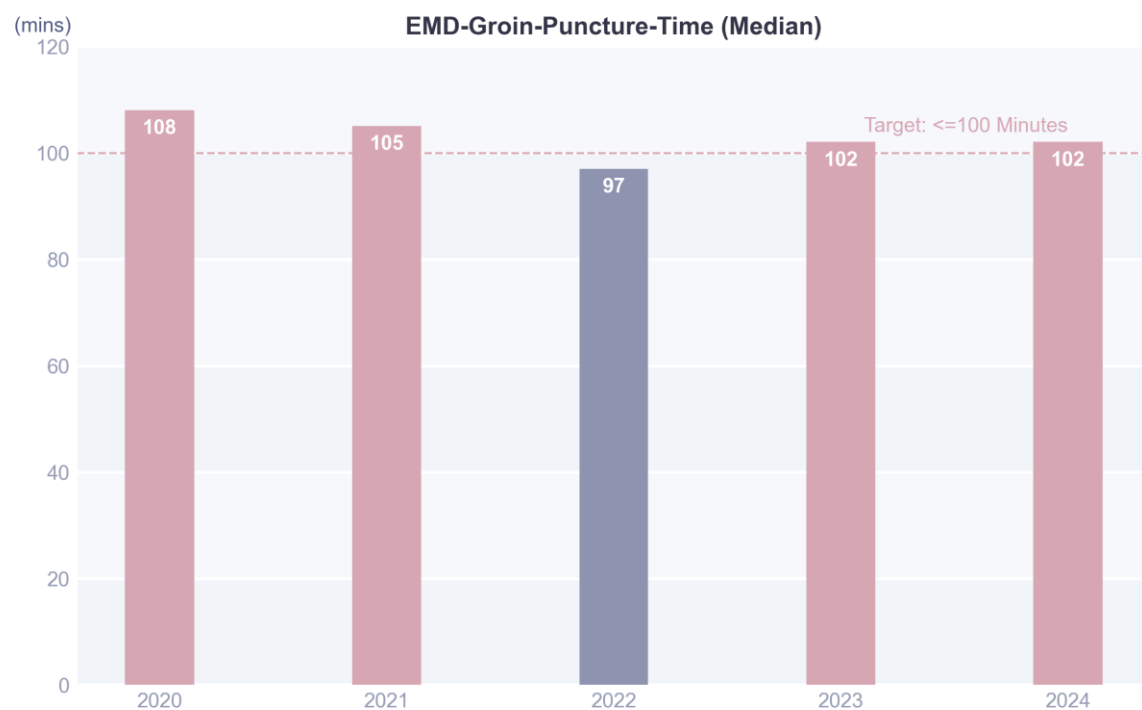
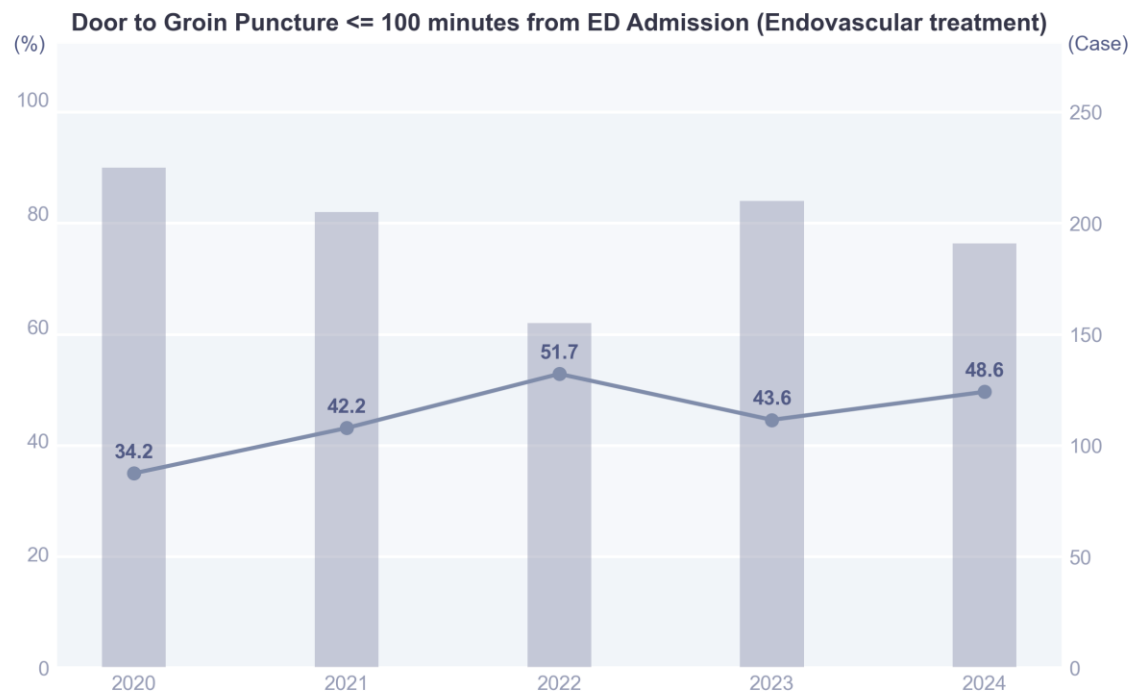


## Door-to-Groin-Puncture Time for Endovascular Treatment

### Definitions

For patients with hyperacute ischemic stroke undergoing **endovascular thrombectomy**, **DOOR-TO-GROIN-PUNCTURE TIME** refers to the time from **emergency department arrival** to **groin puncture** (initiation of endovascular access) should be **100 minutes or less**. This measure ensures expedited access to mechanical clot retrieval in eligible patients with large vessel occlusion.

### Results



*Interpretation*

Door to Groin Puncture rates have decreased in 2023 and started to improve again in 2024

## Endovascular Recannalisation Rates (mTICI 2C/3)

### Definitions

The **MODIFIED TREATMENT IN CEREBRAL INFARCTION (mTICI) SCORE** was developed from the original thrombolysis in cerebral infarction (TICI) scale in 2013 as a tool for determining the response of thrombolytic therapy for ischemic stroke. In neurointerventional radiology it is commonly used for patients post endovascular revascularization. Like most therapy response grading systems, it predicts prognosis. A grade 2C indicates near-perfect reperfusion while a grade 3 indicates complete perfusion.

### Results



### Interpretation

Endovascular Recannalisation rates have improved from 2022 till 2024.

## **Obstetrics & Gynaecology**

## Vaginal Delivery

### Number of Patients with Vaginal Delivery

#### Definitions

**VAGINAL DELIVERY** is the process of giving birth to a baby through the vaginal canal. It is generally considered the natural and preferred method of childbirth for full-term pregnancies. The process involves the mother's body naturally progressing through labor and pushing the baby out.

**PATIENTS WITH VAGINAL DELIVERY:** EDDS (Electronic Database of Delivery Suite)

#### Results



#### Interpretation

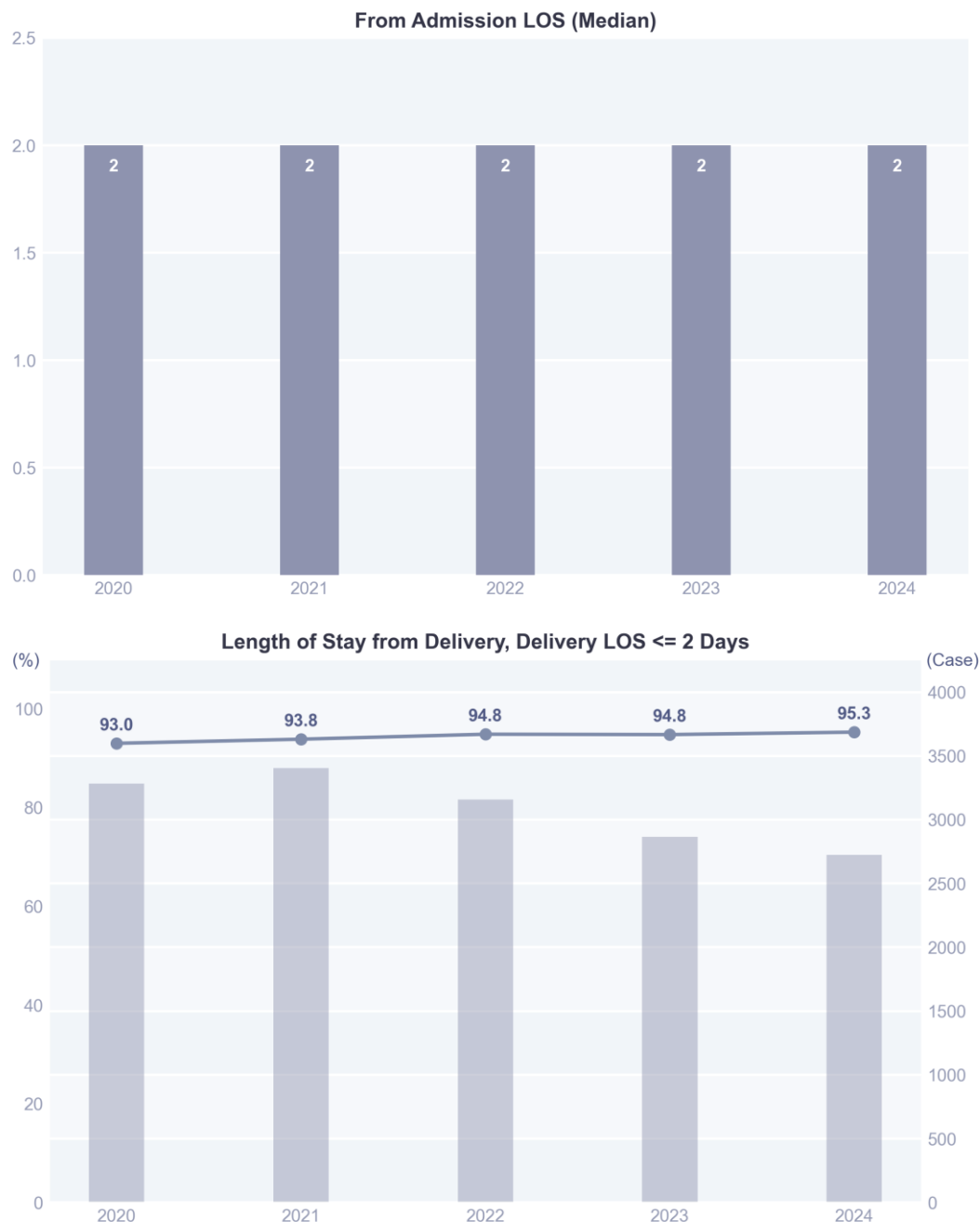
There were more than 3000 vaginal delivery cases in first three years from 2020 to 2022. The no. of cases dropped to less than 3000 in 2023 and 2024.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

The percentage of length of stay from delivery within 2 days was consistently higher from 93.0% in 2020 to 95.3% in 2024.

## No Intensive Care Unit (ICU) Transfer

### Definitions

Patients should not be transferred to Intensive Care Unit (ICU) during admission.

### Results



### Interpretation

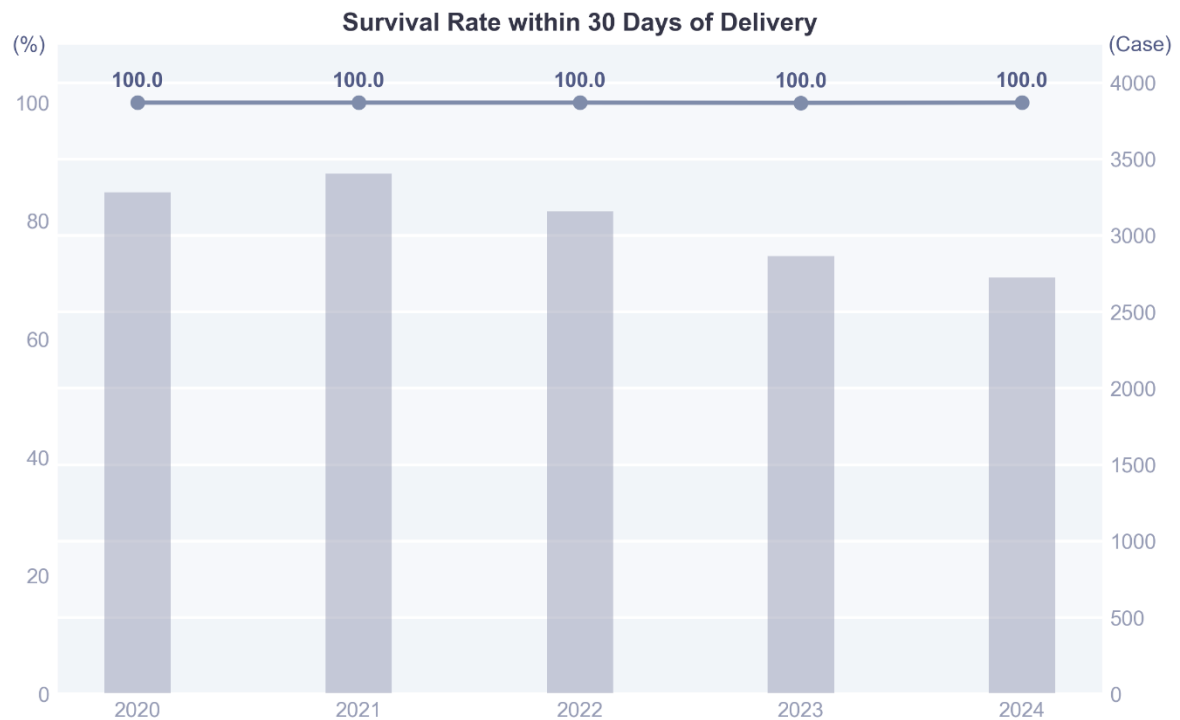
Care was consistent and there was no ICU transfer during admission.

## Survival Rate within 30 Days of Delivery

### Definitions

The proportion of patients who survive within 30 days of delivery, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

100% of survival rate within 30 days of delivery was achieved during past five years.



## Measurements of Patient Safety and Quality of Care

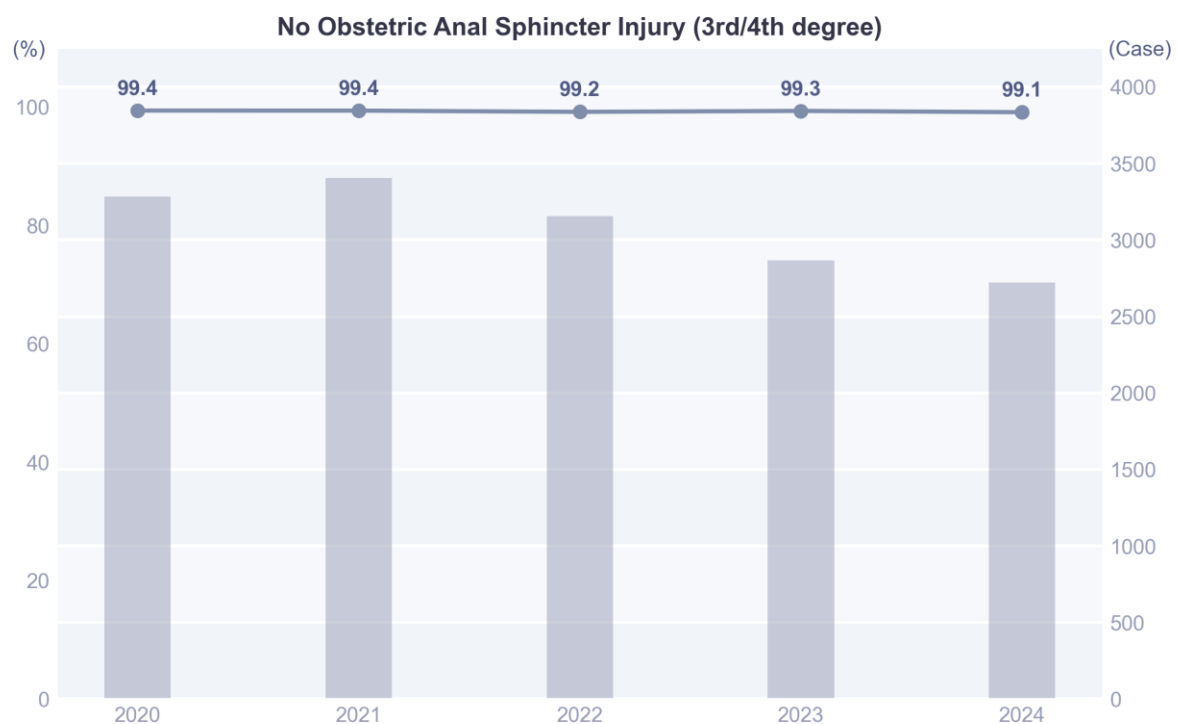
### Definitions

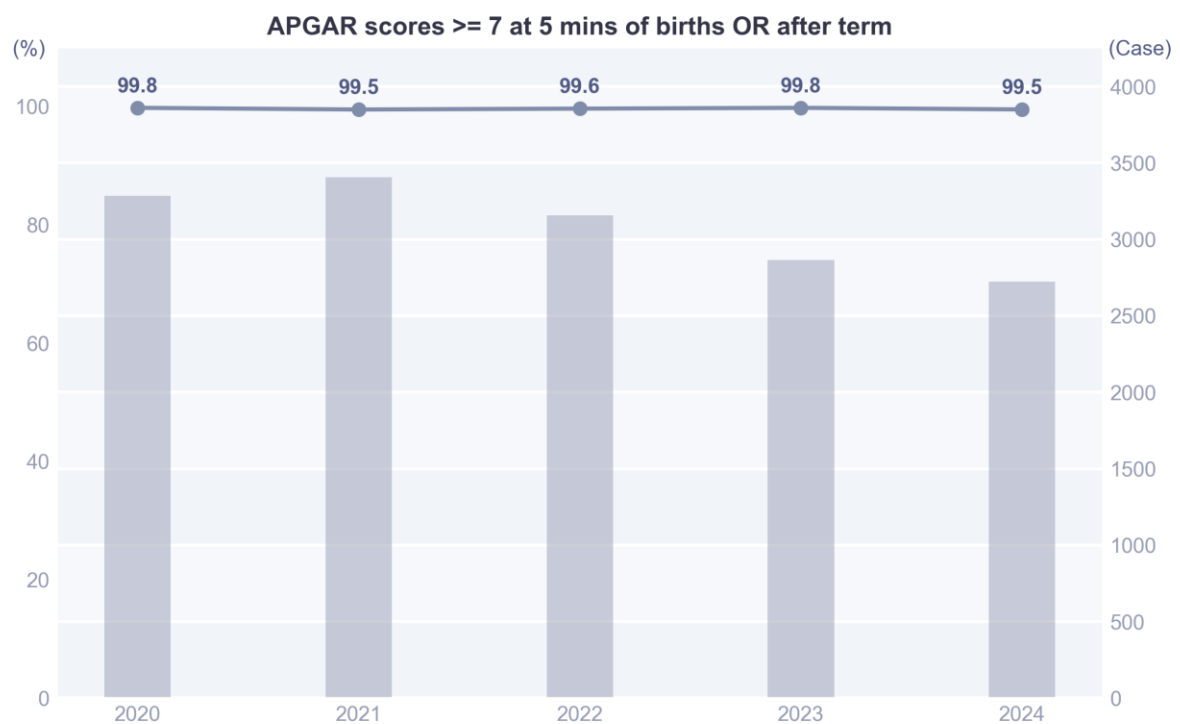
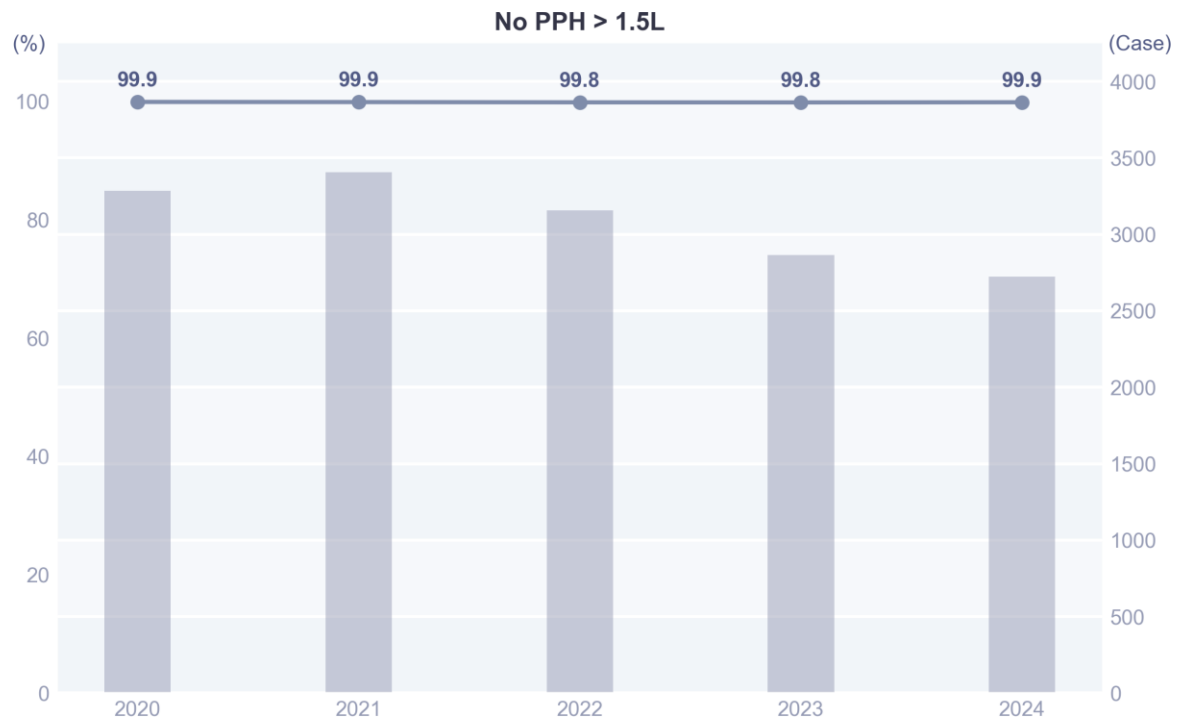
**NO OBSTETRIC ANAL SPHINCTER INJURY (3RD/4TH DEGREE):** Patients should not have Obstetric and sphincter injury (3rd and 4th degree) resulting from unassisted vaginal delivery

**POSTPARTUM HEMORRHAGE (PPH)** is excessive bleeding after childbirth. A loss of 500ml or more after a vaginal birth is generally considered a PPH, while a loss of 1.5L or more is considered a severe or massive PPH. This level of blood loss can be life-threatening and requires immediate medical attention. Patients should not have PPH > 1.5L.

**APGAR SCORES** are a quick way to assess a newborn's physical condition after birth. The test evaluates five characteristics: appearance (skin colour), pulse (heart rate), grimace (reflex irritability), activity (muscle tone), and respiration. Each characteristic is given a score of 0, 1, or 2, and the scores are added together for a total score ranging from 0 to 10. Baby APGAR score at 5 min of births at or after term should not be less than 7.

### Results





### Interpretation

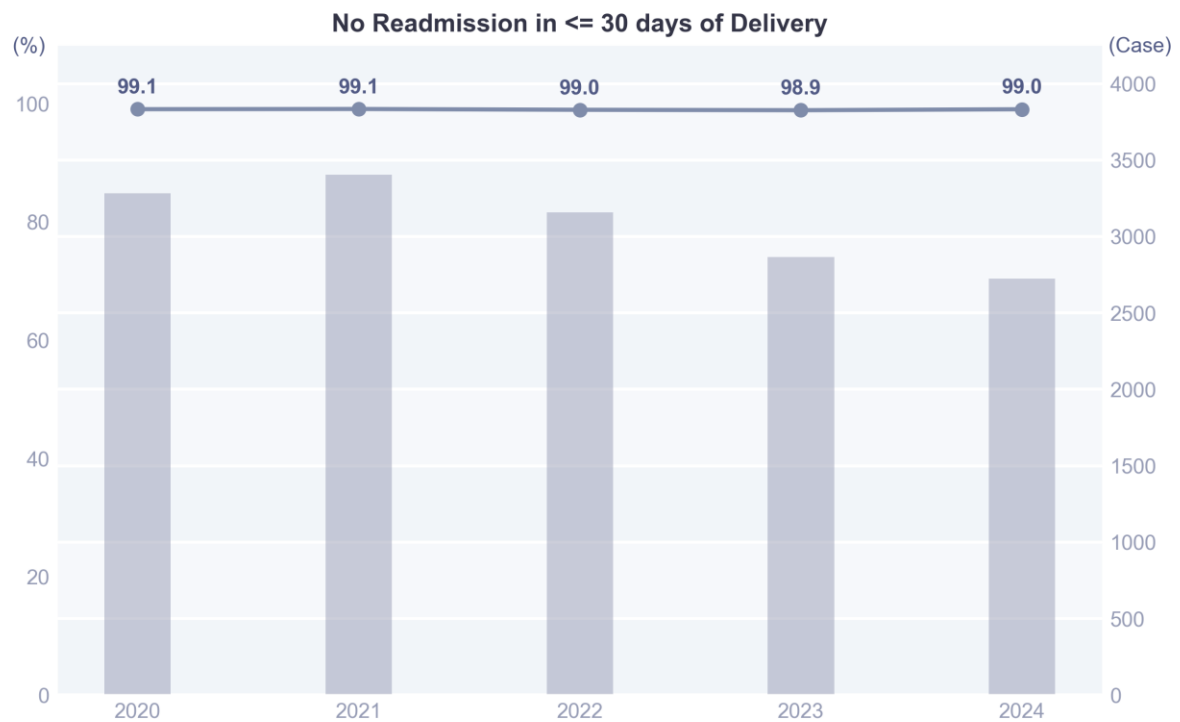
Patient safety and quality of care was high for vaginal delivery in NUH as all three indicators achieved around 99% across the years.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their delivery. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

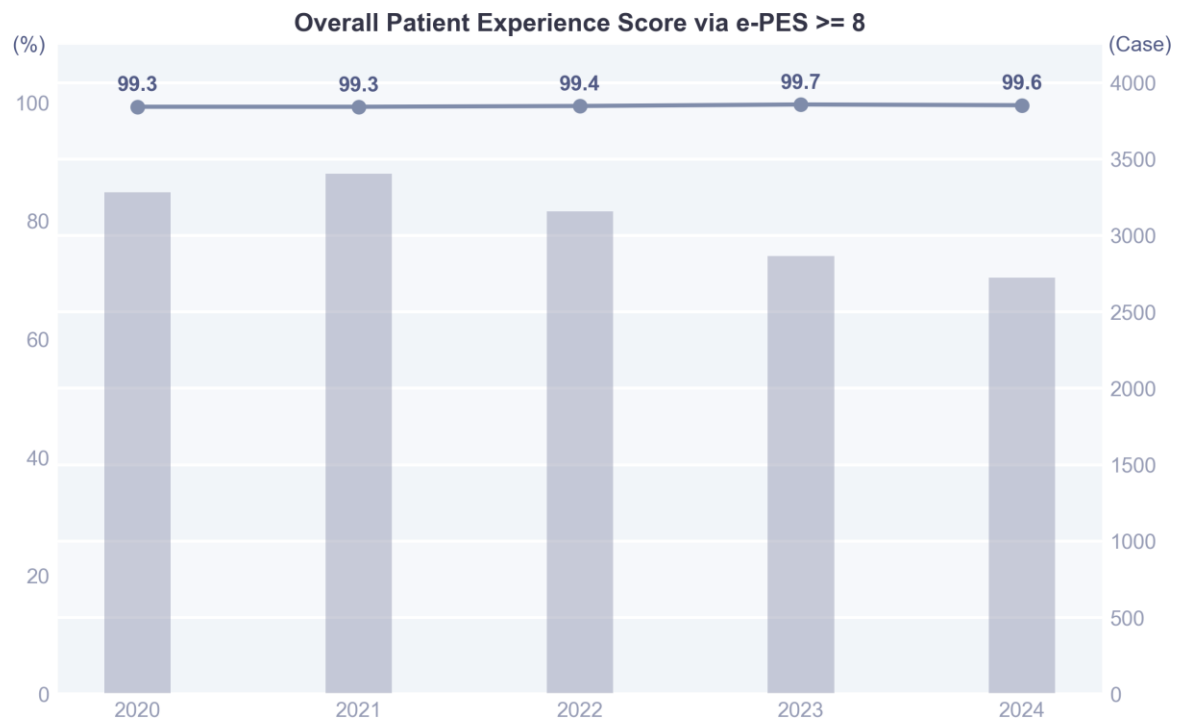
Emergency readmission rate within 30 days was about 1%.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Overall satisfaction rate with inpatient services was consistently high.

## Caesarean Section

### Number of Patients with Caesarean Section

#### Definitions

##### PATIENTS WITH CAESAREAN SECTION:

Collected by MOH TOSP Code (Single or multiple TOSPs): SI834U, SP832U, SP834U, SP835U

#### Results



#### Interpretation

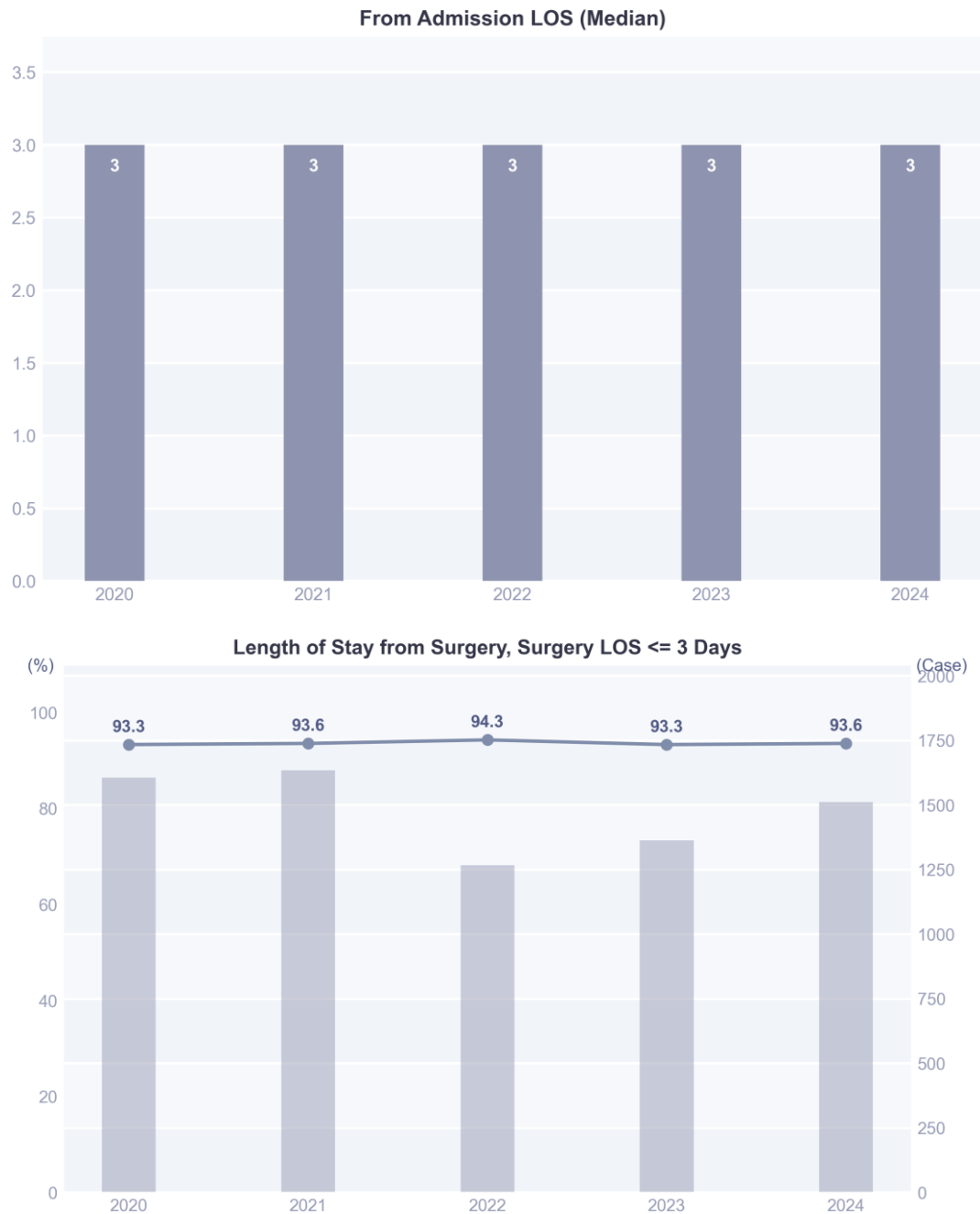
The no. of cases dropped in 2022, however increased gradually to 1511 in 2024.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

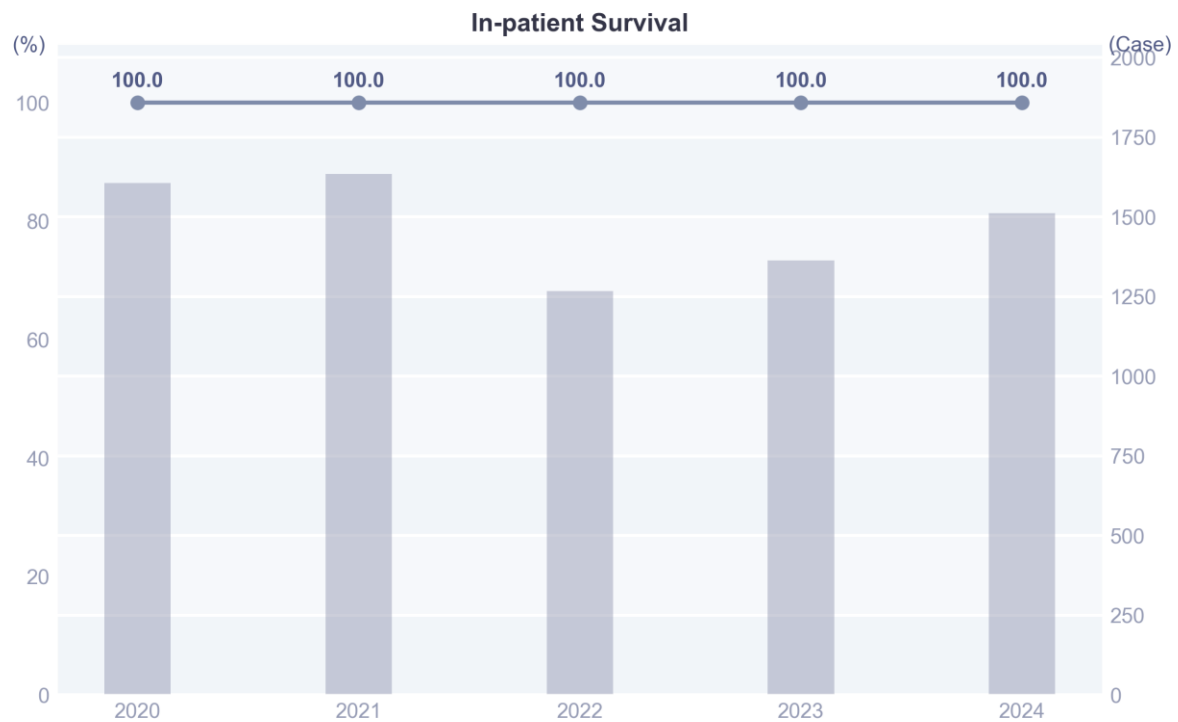
After surgery, more than 90% of patients were able to discharge within 3 days during past five years.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

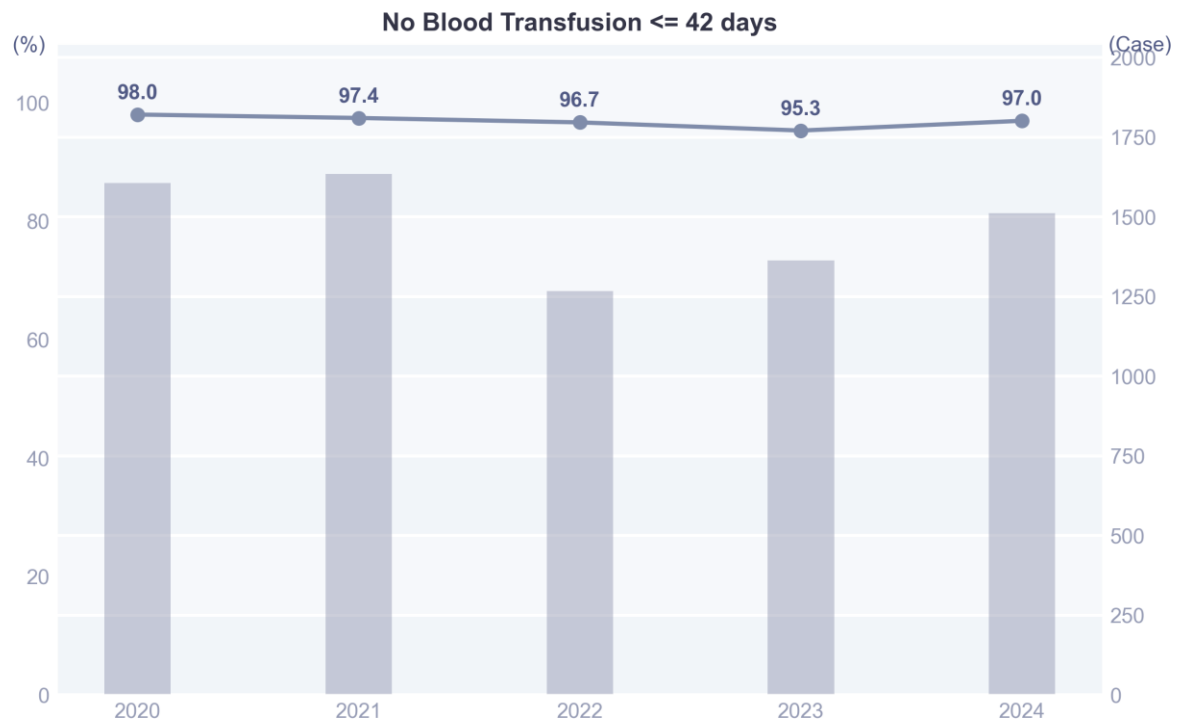
There was 100% of in-patient survival rate in past five years.

## No Blood Transfusion

### Definitions

Patients should not receive blood transfusion during admission.

### Results



### Interpretation

No Blood transfusion rate saw gradual decrease from 98.0% in 2020 to 95.3% in 2023, however, there was an increase 97.0% in 2024.



## No Intensive Care Unit (ICU) Transfer

### Definitions

Patients should not be transferred to Intensive Care Unit (ICU) during admission.

### Results



### Interpretation

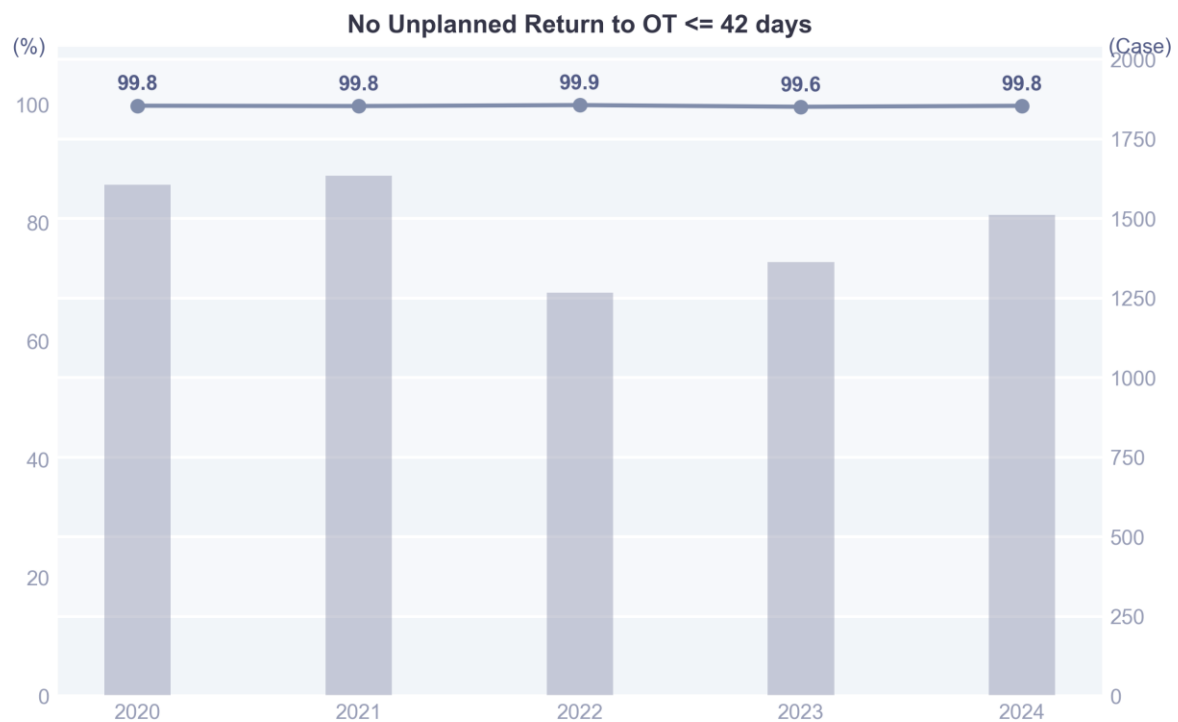
The percentage of No ICU transfer rate was consistently high.

## No Unplanned Return to Operation Theatre (OT) within 42 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 42 days from the initial discharge due to any cause

### Results



### Interpretation

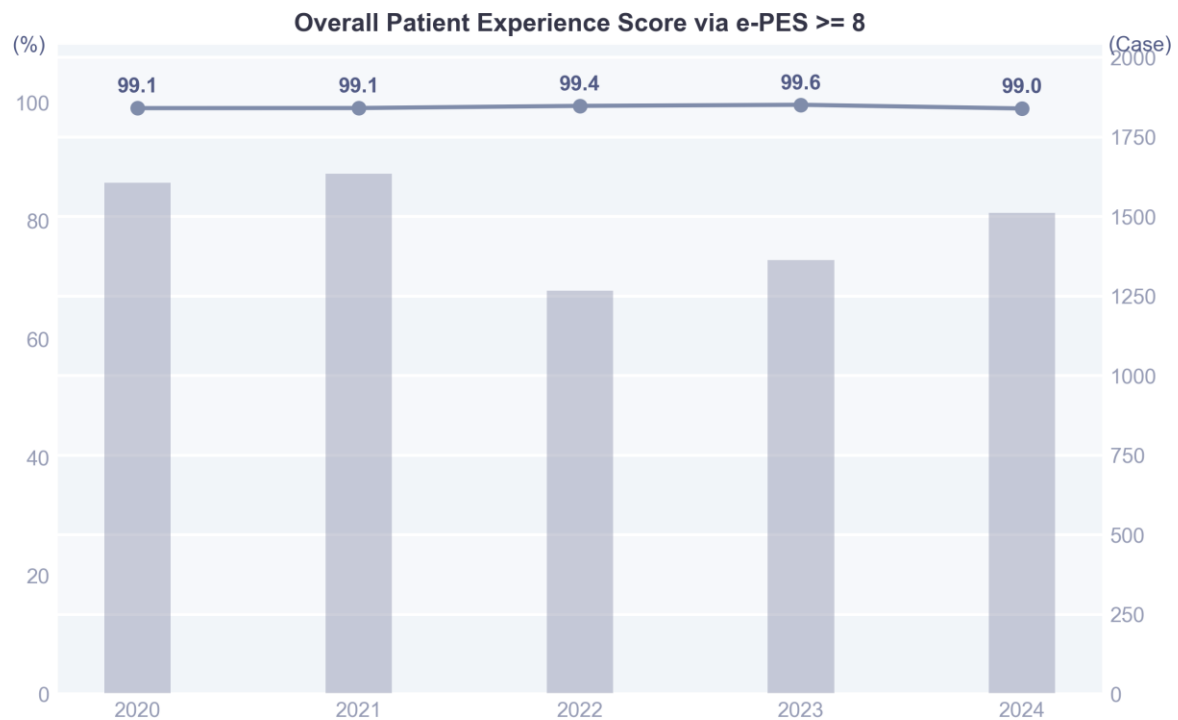
The high percentage of No unplanned return to OT within 42 days was observed.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

The overall satisfaction score for inpatient services was relatively high.

## Hysterectomy

### NUH VDO Definition and Quality Indicators

| Cohort             |                                                                     |                                                                                                                                                                                                                                                                                                                            |
|--------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cohort Definition  |                                                                     | By DRG:-<br>N04A, N04B, N12A, N12B                                                                                                                                                                                                                                                                                         |
| Quality Indicators |                                                                     |                                                                                                                                                                                                                                                                                                                            |
| 1                  | Post-op Length of stay $\leq$ 4 days                                | Patient should stay $\leq$ 4 days after the specific procedure                                                                                                                                                                                                                                                             |
| 2                  | No blood transfusion                                                | No blood transfusion is done for patient during the hospital admission                                                                                                                                                                                                                                                     |
| 3                  | No In-hospital mortality                                            | Patients should not die in hospital                                                                                                                                                                                                                                                                                        |
| 4                  | No emergency readmission in $\leq$ 30 days of discharge (All cause) | Patients should not be readmitted in emergency to hospital in $\leq$ 30- days of initial discharge                                                                                                                                                                                                                         |
| 5                  | No Post-Op Complication in $\leq$ 30 Days                           | No Procedure-related complications within the hospital admission or $\leq$ 30 days of initial discharge (complication is defined as secondary diagnosis of current admission that does not present on admission, and primary or secondary diagnosis of subsequent readmissions within $\leq$ 30 days of initial discharge) |
| 6                  | ICU Length of stay $\leq$ 2 days                                    | Patient should not stay in ICU more than 2 days                                                                                                                                                                                                                                                                            |
| 7                  | No unscheduled return to OT $\leq$ 30 days                          | Patients should not return to OT in same episode or $\leq$ 30 days of discharge                                                                                                                                                                                                                                            |

(Note: VDO indicators for reference only, the table will be removed from the publication later)

## Number of Patients with Hysterectomy

### Definitions

A **HYSTERECTOMY** is a surgical procedure to remove the uterus. It can be performed for the treatment of benign and malignant gynecological conditions. The surgery can be performed through different approaches namely, open surgery, minimally-invasive surgery (laparoscopic, robotic), or vaginal surgery.

### PATIENTS WITH HYSTERECTOMY:

Collected by DRG: N04A, N04B, N12A, N12B

### Results



### Interpretation

The number of hysterectomy cases were around 350 in a year in NUH.

## From Admission Length of Stay

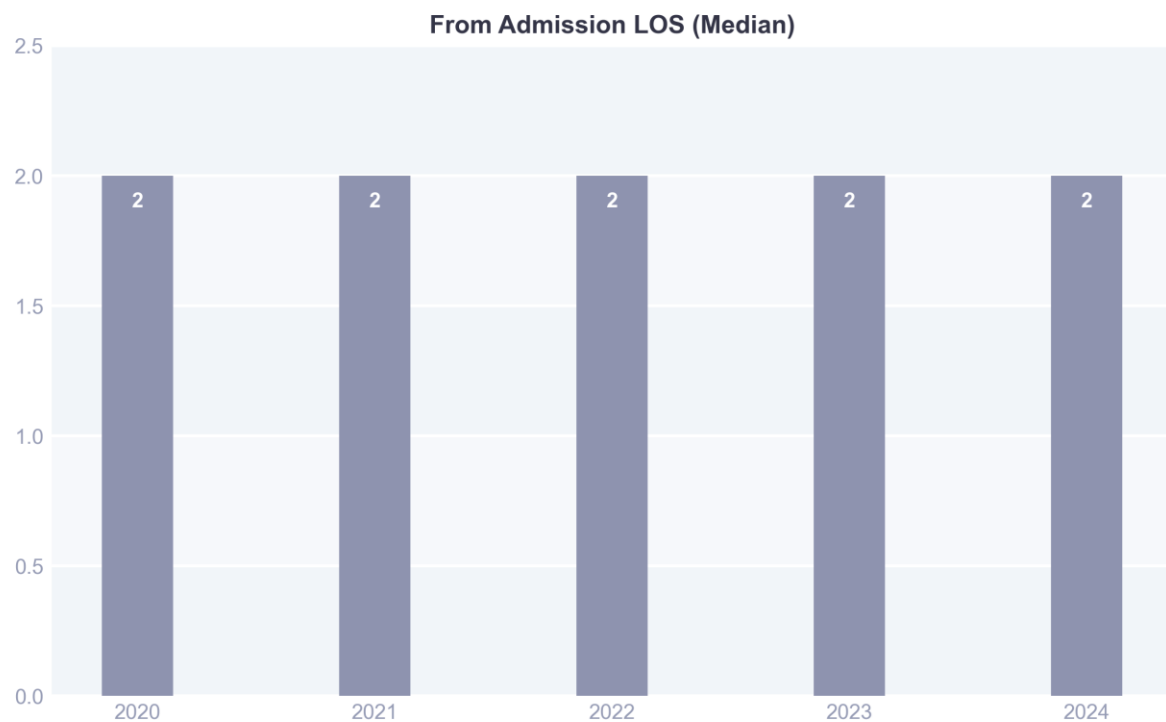
### Definitions

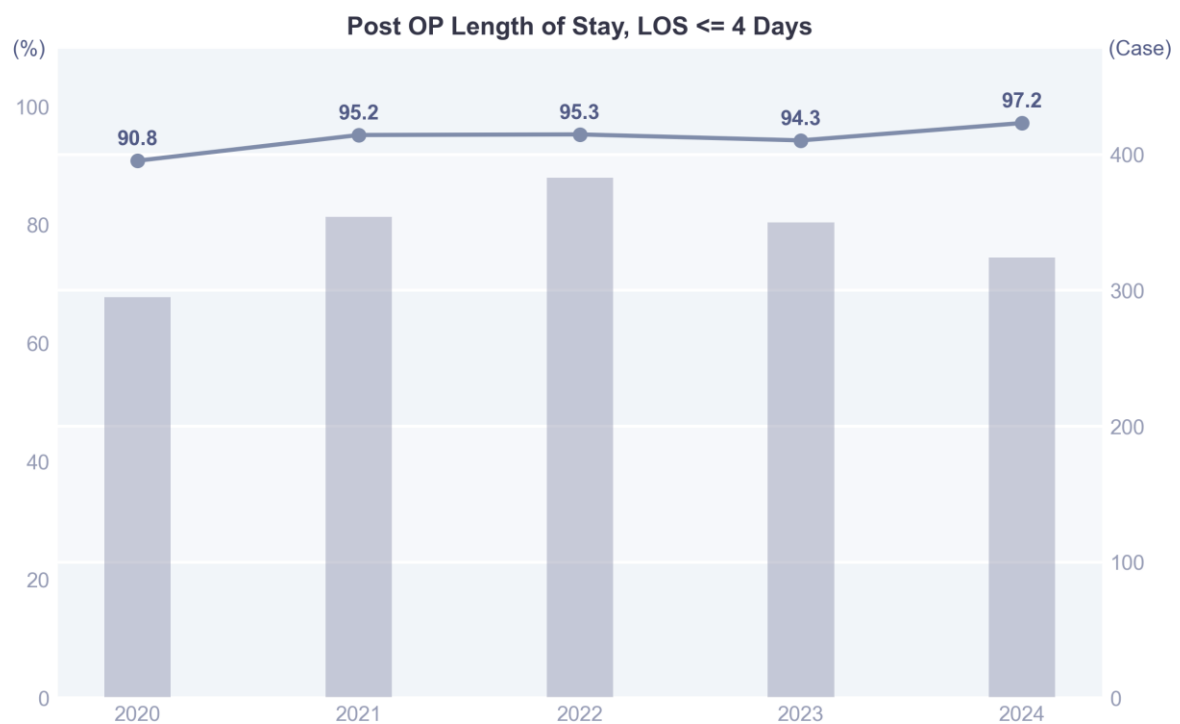
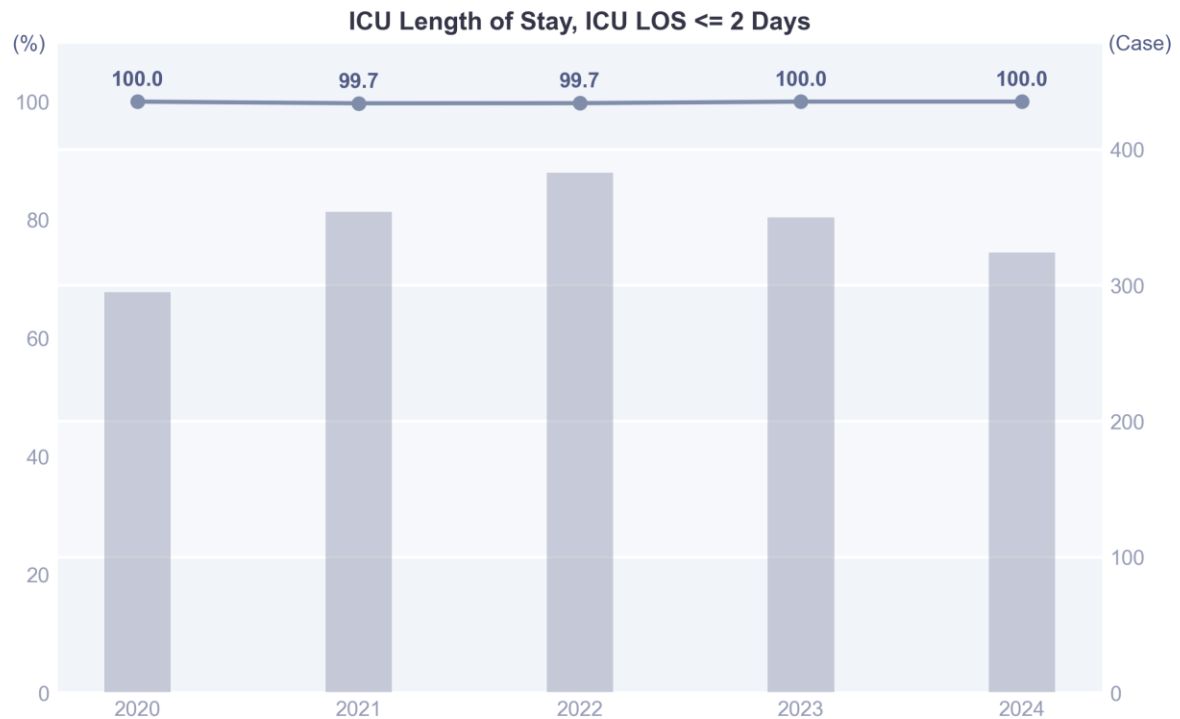
**FROM ADMISSION LENGTH OF STAY:** The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

**ICU LENGTH OF STAY:** Patients should stay in ICU for no more than two days.

**POST OP LENGTH OF STAY:** Patients should stay no more than four days from the date of operation to the date of discharge.

### Results





### Interpretation

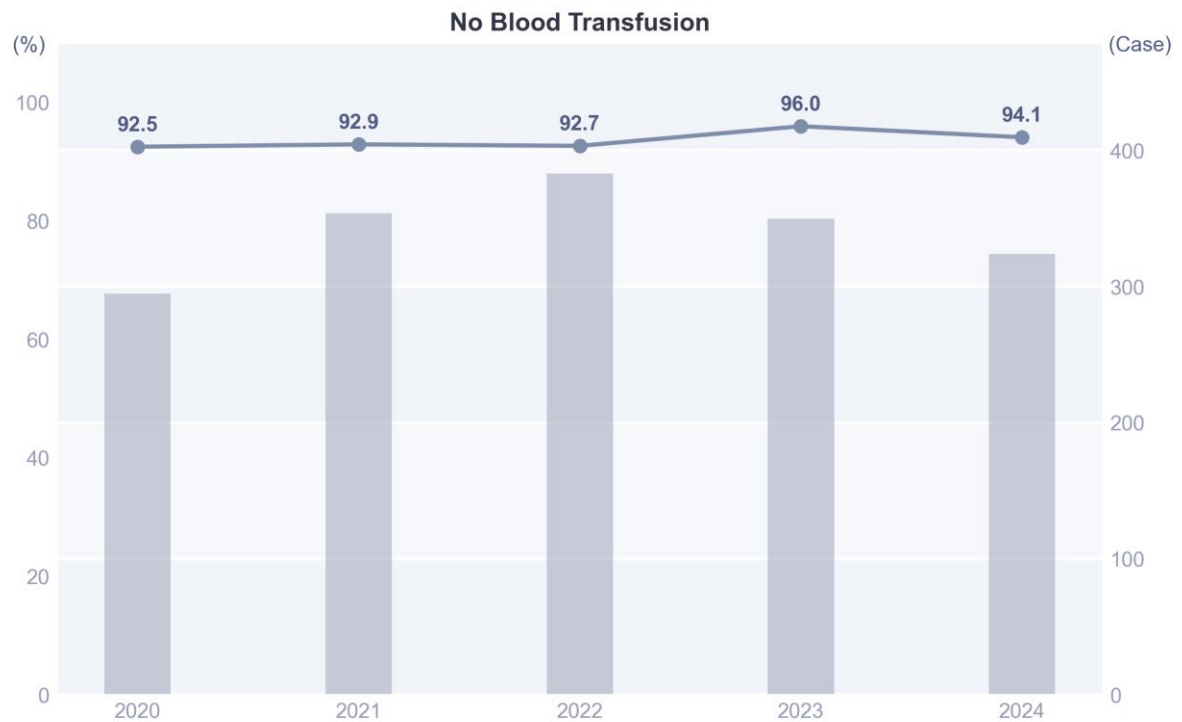
Median length of stay was 2 days and more than 90% of patients were able to go home within 4 days after operation.

## No Blood Transfusion

### Definitions

Patients should not receive blood transfusion during admission.

### Results



### Interpretation

Blood transfusion rate for hysterectomy cases was 4-7% in past five years.

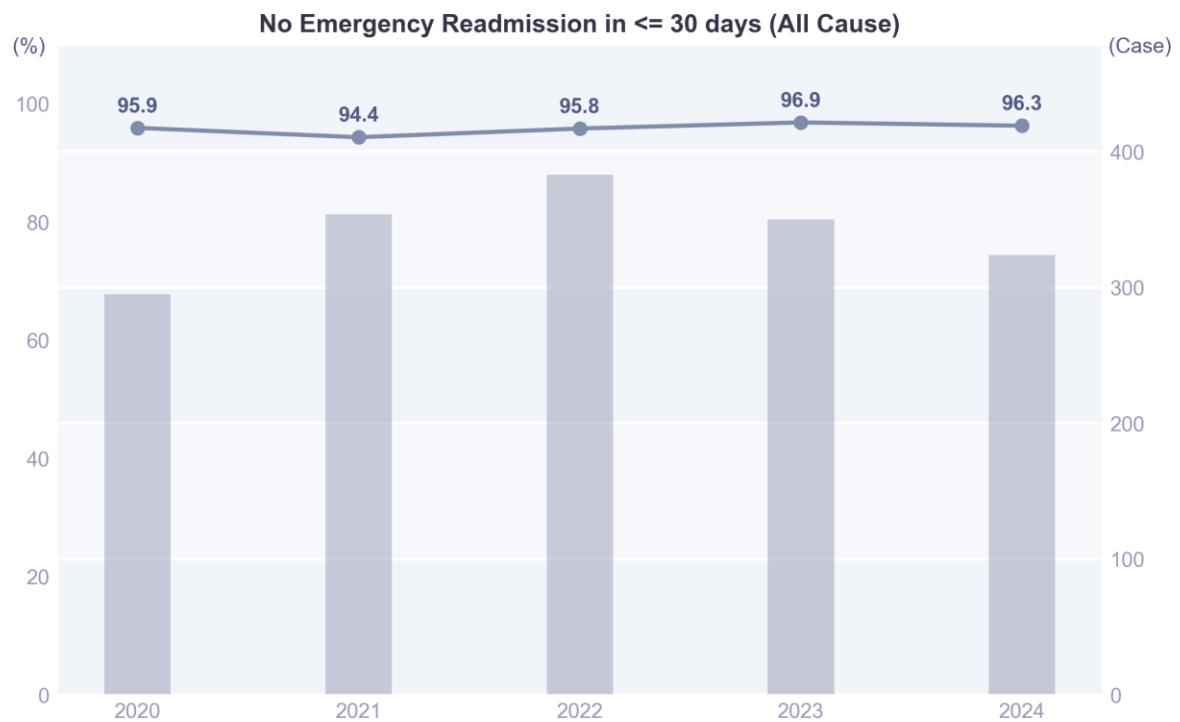


## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

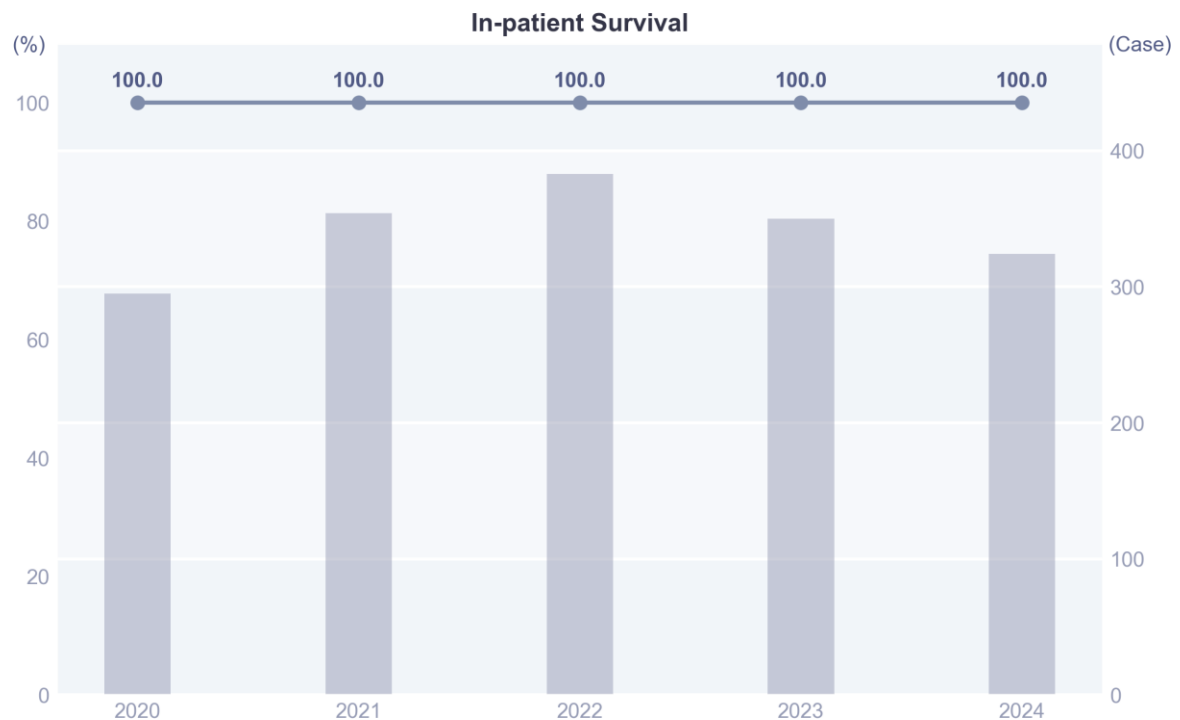
Around 4% were readmitted to hospital via emergency each year due to any cause.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

The in-hospital survival rate was 100% in past five years.

## No Post-operative Complications within 30 Days

### Definitions

Patients should not have post-operative complications during the hospital admission and within 30 days from initial discharge.

Post-operative complication is defined as 1) secondary diagnosis of current admission that does not present on admission, or 2) primary or secondary diagnosis of subsequent readmissions within  $\leq 30$  days of initial discharge).

### Results



### Interpretation

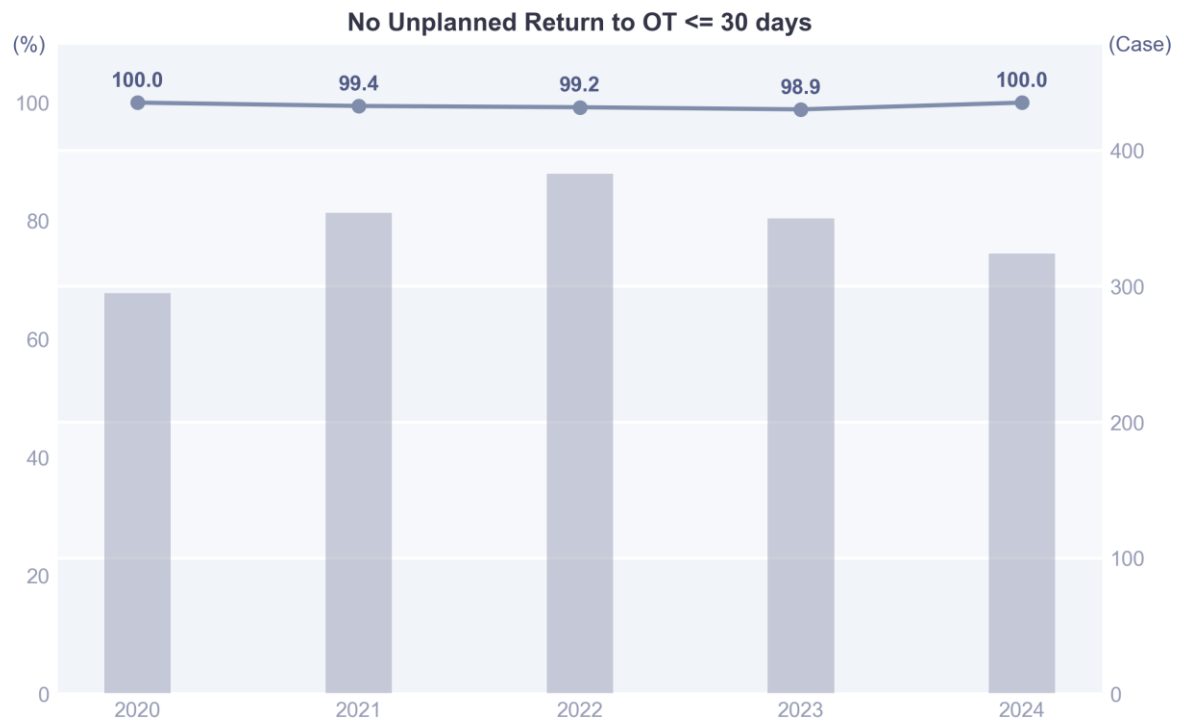
The 'No Post Op Complication' within 30 days saw a gradual increase since 2020, with 87.5% to 92.6% in 2023. Slight drop with 90.7% in 2024 was observed.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

Almost all patients were not needed to return to OT within past five years.

## **Ophthalmology**

## Cataract

### Number of Patients with Cataract

#### Definitions

**CATARACT SURGERY** is a common procedure to remove the cloudy natural lens of the eye and replace it with an artificial lens (intraocular lens or IOL).

**PATIENTS WITH CATARACT:** Collected by MOH TOSP Code (Single or multiple TOSPs): SL808L, SL809L, SL991A, SL991B, SL992A, SL992B

#### Results



#### Interpretation

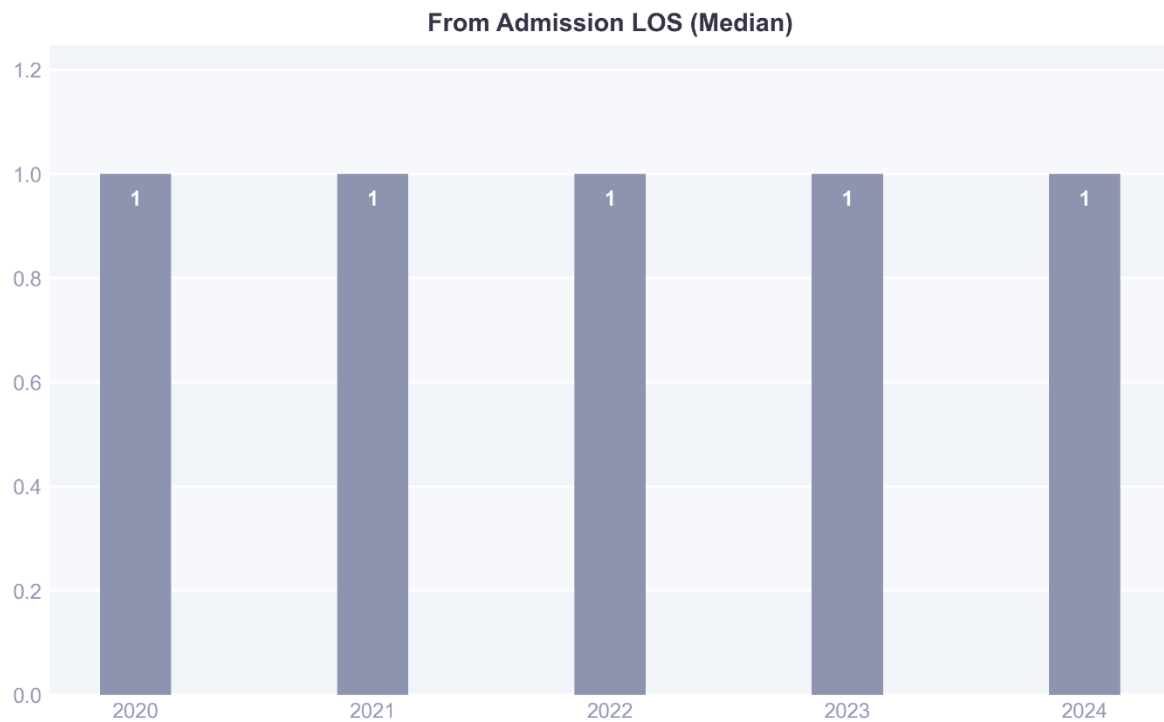
The number of cases has been increasing consistently over the years, reaching 5,354 in 2024.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

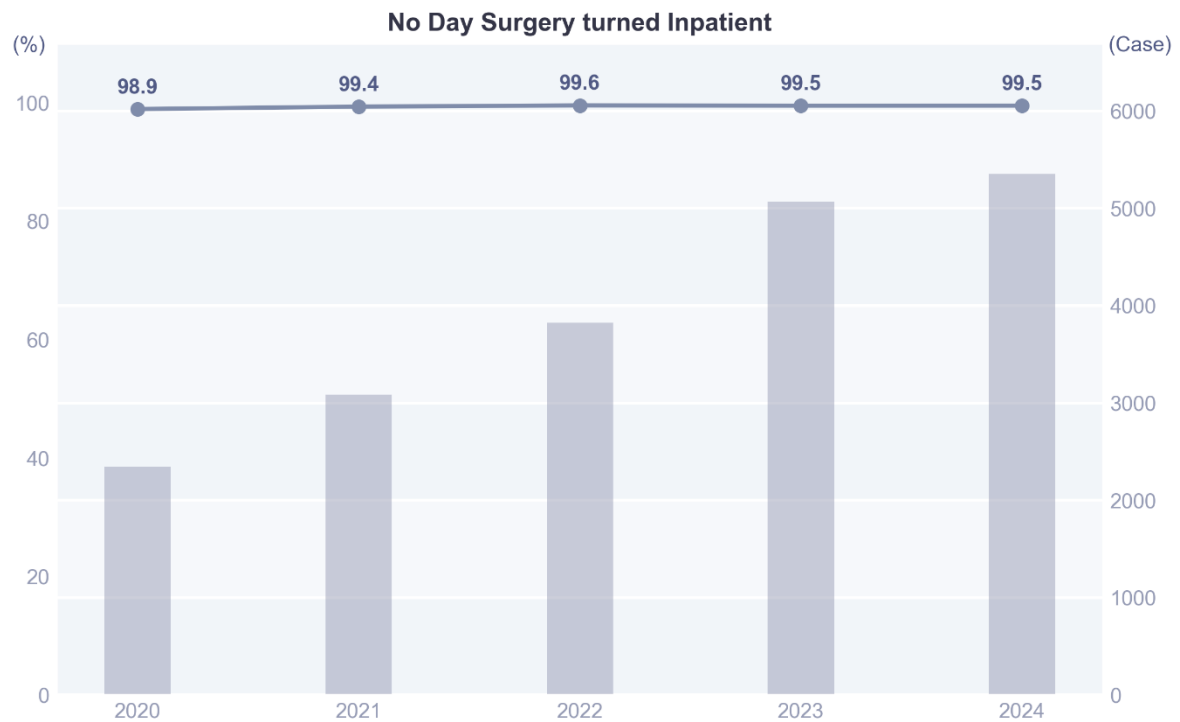
Median Length of Stay for Cataract cases have maintained at 1 day for the last five years.

## No Day Surgery Turned Inpatient

### Definitions

Patients with day surgeries should not be admitted to the hospital.

### Results



### Interpretation

Despite the rising number of cases, the percentage of “No Day Surgery turned Inpatient” has remained very high and stable, even slightly improving over time.

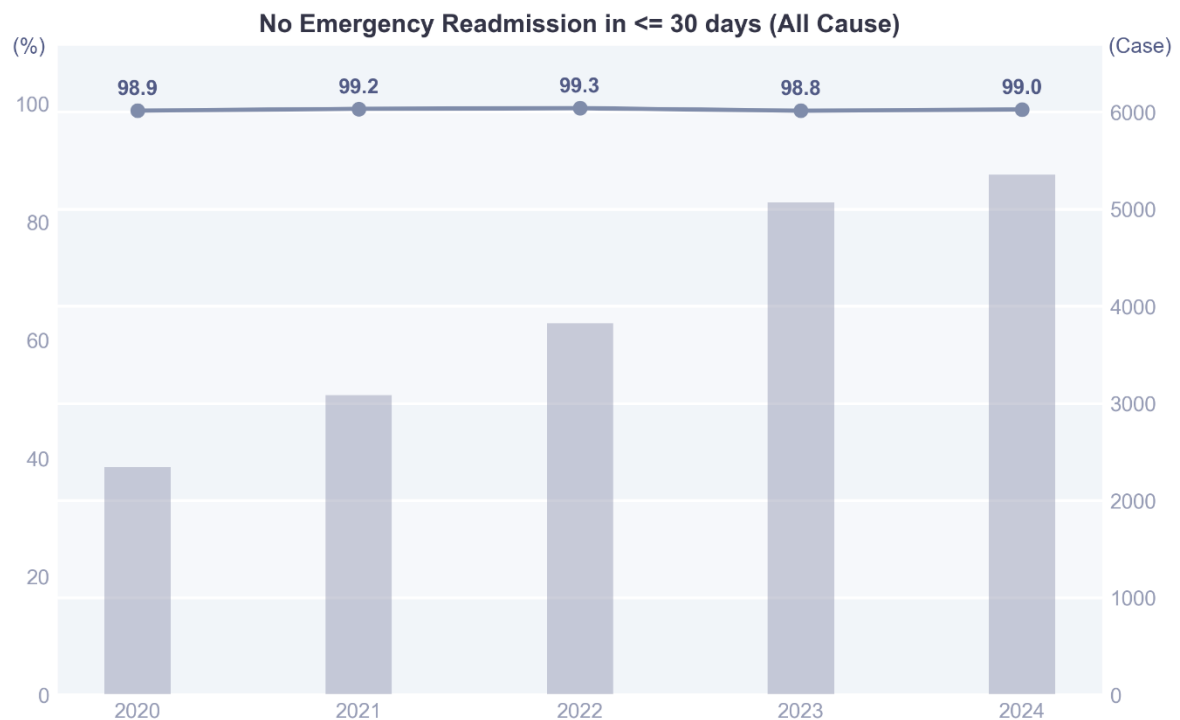


## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

The rate of “No Emergency Readmission in ≤ 30 days (All Cause)” has remained very high and stable with 99%.

## Post-Operative Complications and Quality of Care

### Definitions

No Endophthalmitis: 1) No ICD codes (both primary and secondary) related to Endophthalmitis are tagged for the current episode that does not present at admission; and 2) No ICD codes (both primary and secondary) related to Endophthalmitis are tagged for any new case in  $\leq 30$  days from discharge datetime

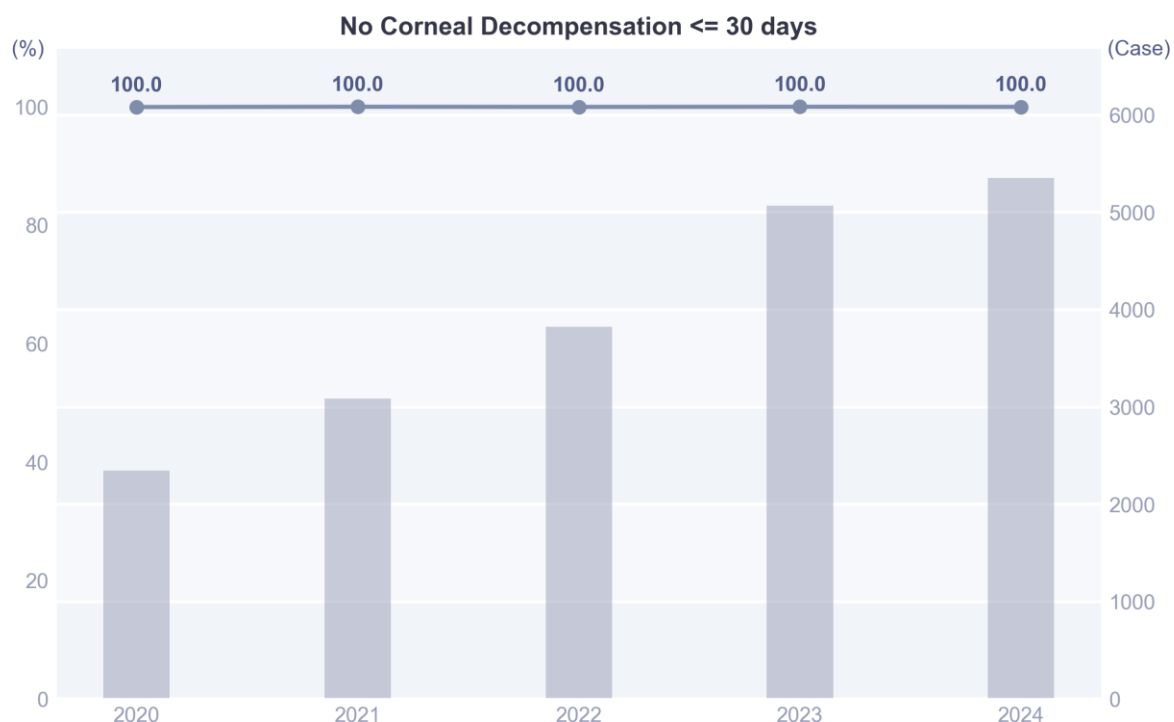
No Corneal Decompensation: 1) No ICD codes (both primary and secondary) related to Corneal Decompensation are tagged for the current episode that's does not present at admission; and 2) No ICD codes (both primary and secondary) related to Corneal Decompensation are tagged for any new case in  $\leq 30$  days from discharge datetime

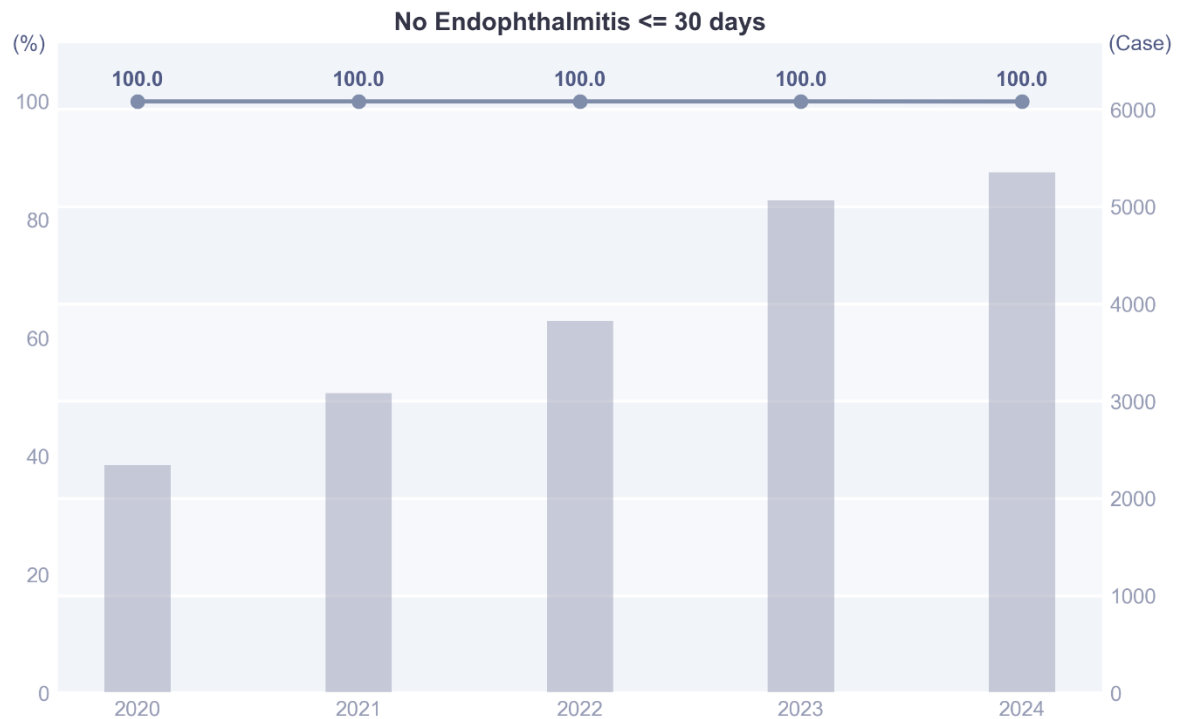
No Other Eye Related Post-Op Complications: 1) No ICD codes (both primary and secondary) specified as "Other eye related post-op complication" are tagged for the current episode; and 2) No ICD codes (both primary and secondary) related to Vitreous loss are tagged for any new case in  $\leq 30$  days from discharge datetime

No Other Post-Op Complication: 1) No ICD codes (both primary and secondary) related to Vitreous loss are tagged for the current episode that does not present at admission; and 2) No ICD codes (both primary and secondary) related to Vitreous loss are tagged for any new case in  $\leq 30$  days from discharge datetime

No Zonulysis: 1) No ICD codes (both primary and secondary) related to Zonulysis are tagged for the current episode that's does not present at admission; and 2) No ICD codes (both primary and secondary) related to Zonulysis are tagged for any new case in  $\leq 30$  days from discharge datetime

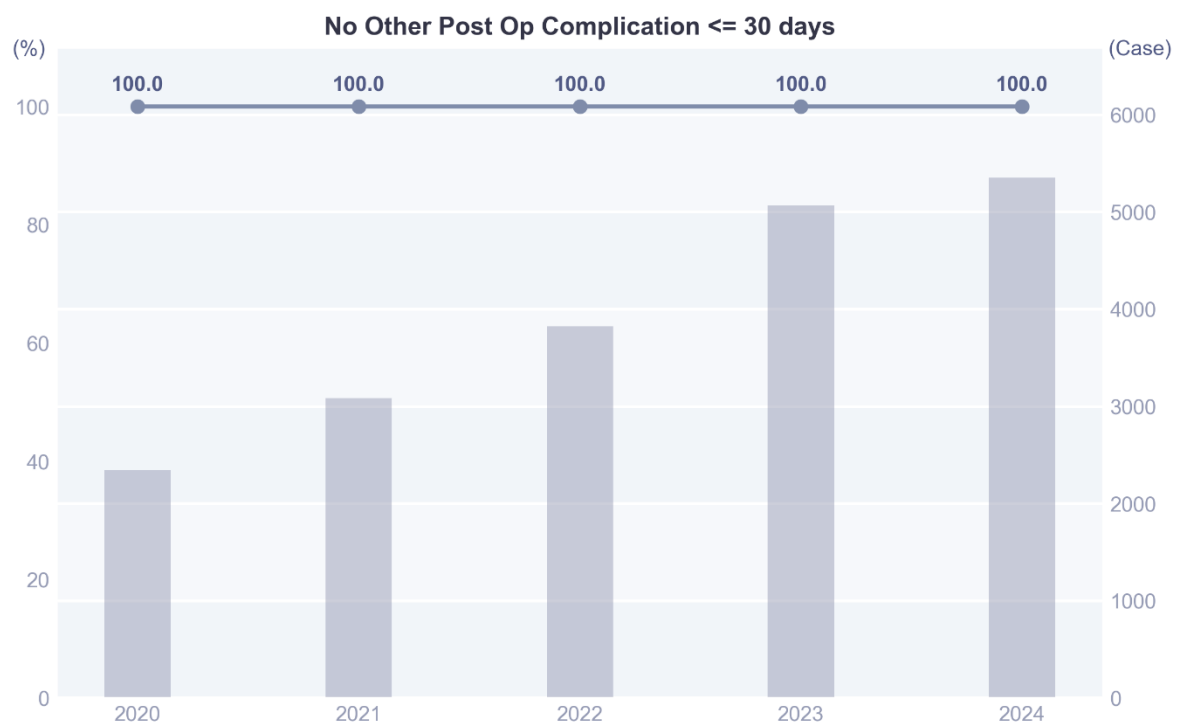
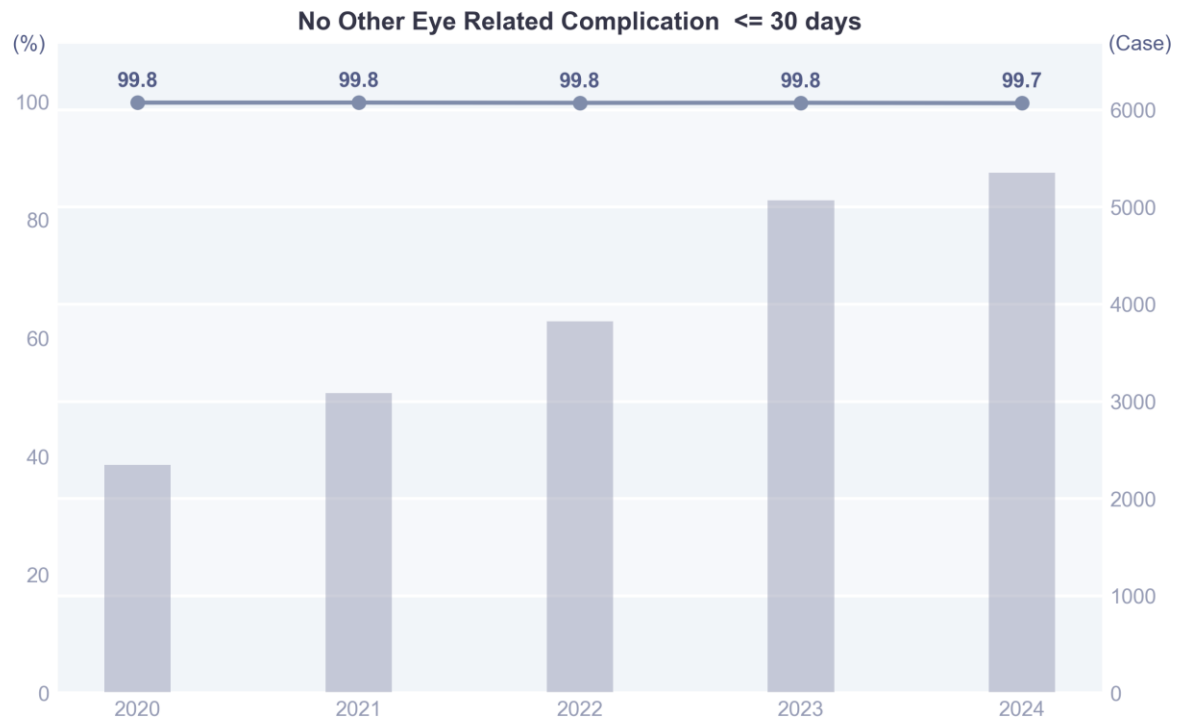
### Results





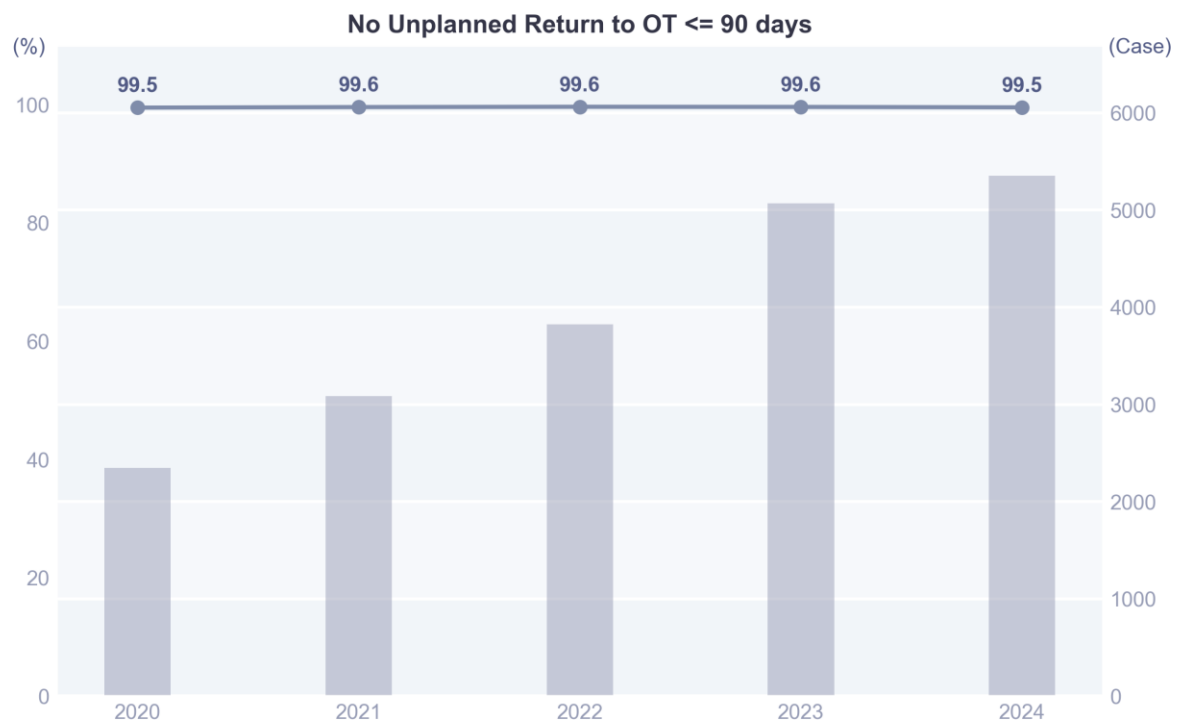
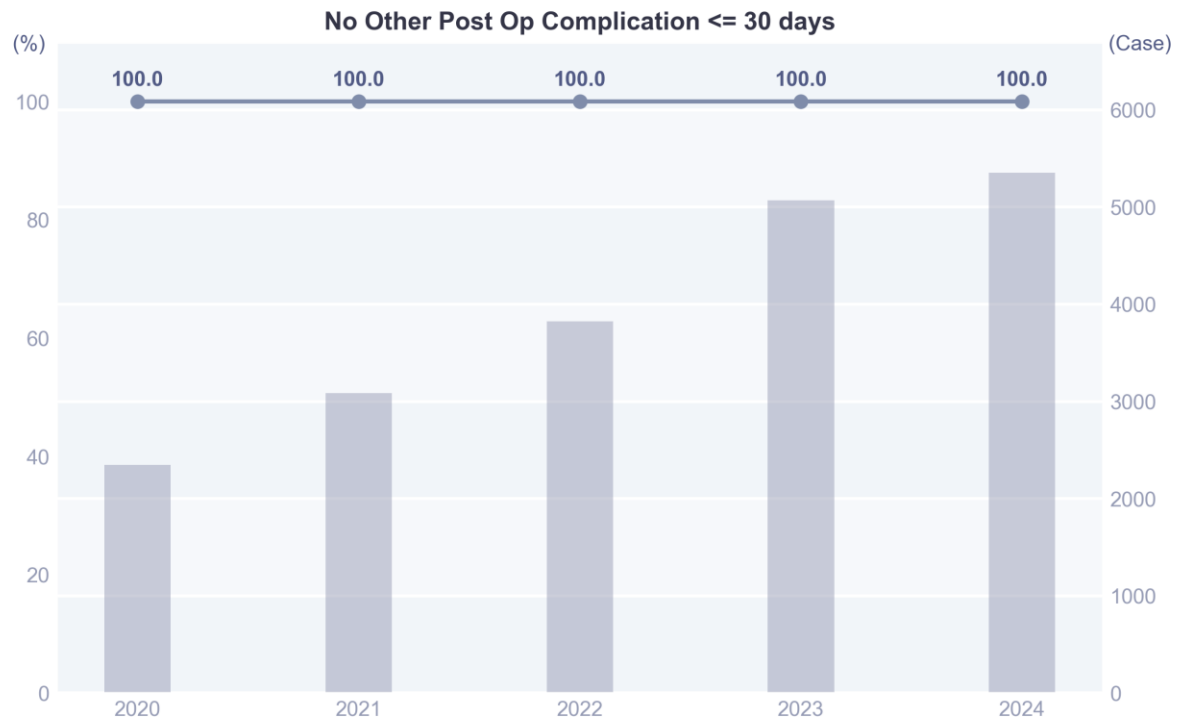
**Interpretation**

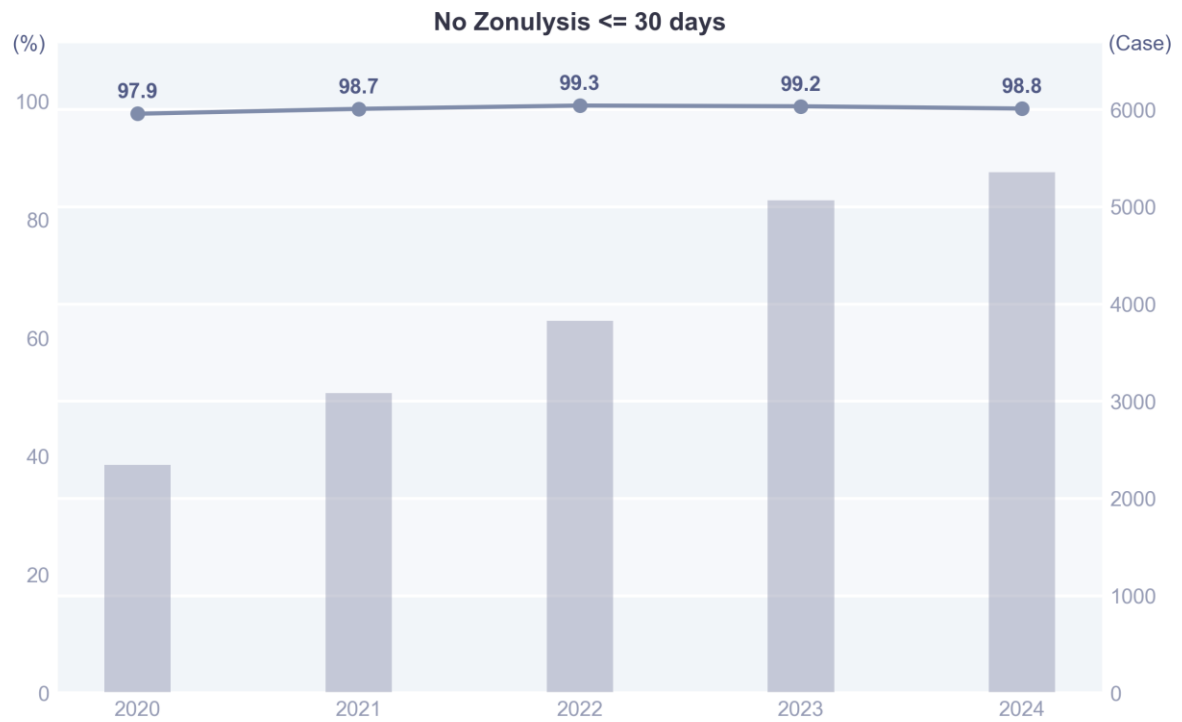
"No Corneal Decompensation <= 30 days" and "No Endophthalmitis <= 30 days" remains perfectly consistent at 100% for all five years.



### Interpretation

"No Other Eye Related Complications <= 30 days" and "No Other Post Op Complication <= 30 days" remains perfectly consistent at 100% for all five years



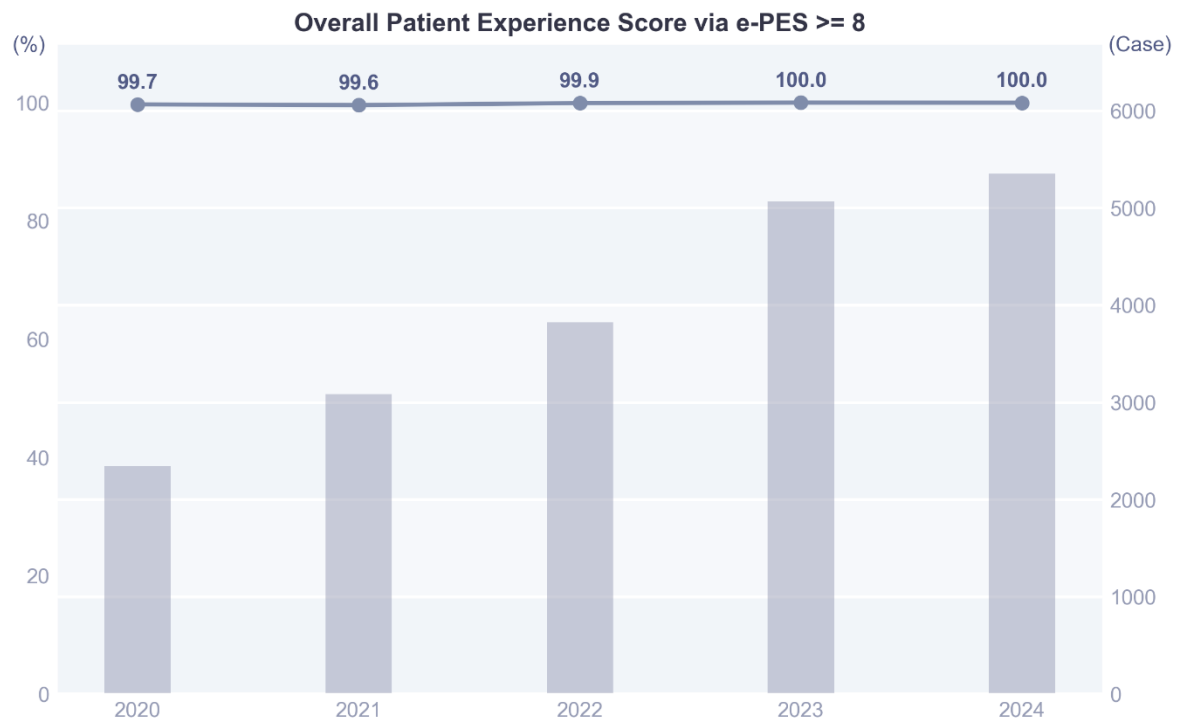


## Patient Experience Score (PES)

### Definitions

The Patient Experience Score (PES) evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Despite the rising number of cases, the "Overall Patient Experience Score via e-PES  $\geq 8$ " has not only remained high but has improved, reaching 100% in the last two years.

## Trabeculectomy

### Number of Patients with Trabeculectomy

#### Definitions

**GLAUCOMA** is a group of eye diseases that can lead to damage of the optic nerve. The optic nerve transmits visual information from the eye to the brain. Glaucoma may cause vision loss if left untreated.

**TRABECULECTOMY** is a surgical procedure performed to lower intraocular pressure in patients with glaucoma.

**PATIENTS WITH TRABECULECTOMY:** Collected by TOSP Code: SL700E, SL803E, SL810L, SL811L

#### Results



#### Interpretation

The number of trabeculectomy cases done in NUH has been increasing over the years.

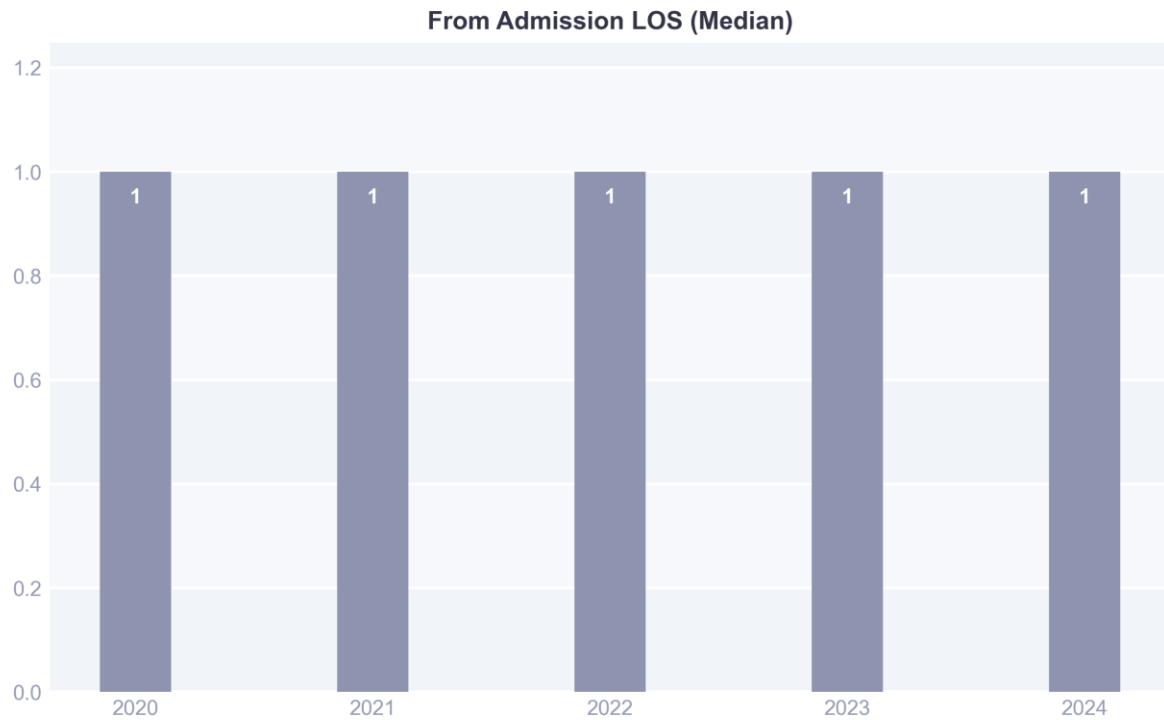


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

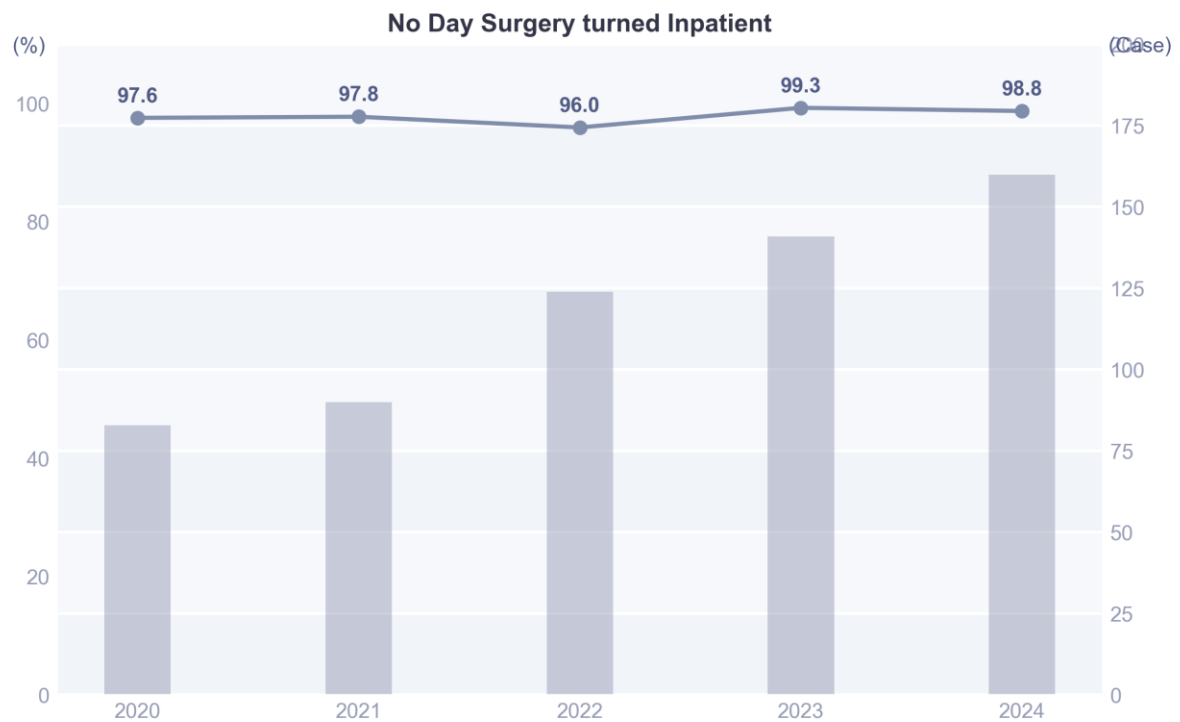
The median duration a patient will stay in hospital for the surgery is 1 day.

## No Day Surgery Turned Inpatient

### Definitions

Patient should not be admitted for inpatient care during a Day Surgery episode

### Results



### Interpretation

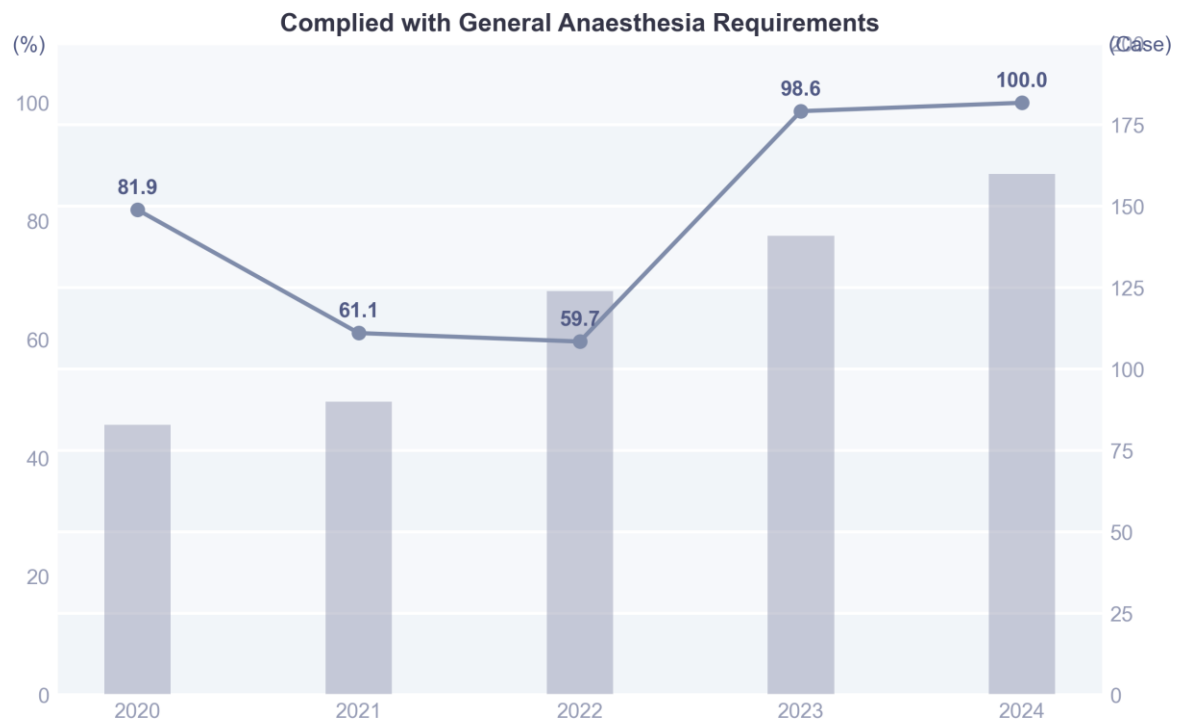
The incidence of day surgery turning inpatient has been very rare, especially since 2023.

## Complied with General Anaesthesia Requirements

### Definitions

Patient was not given general anaesthesia during the procedure

### Results



### Interpretation

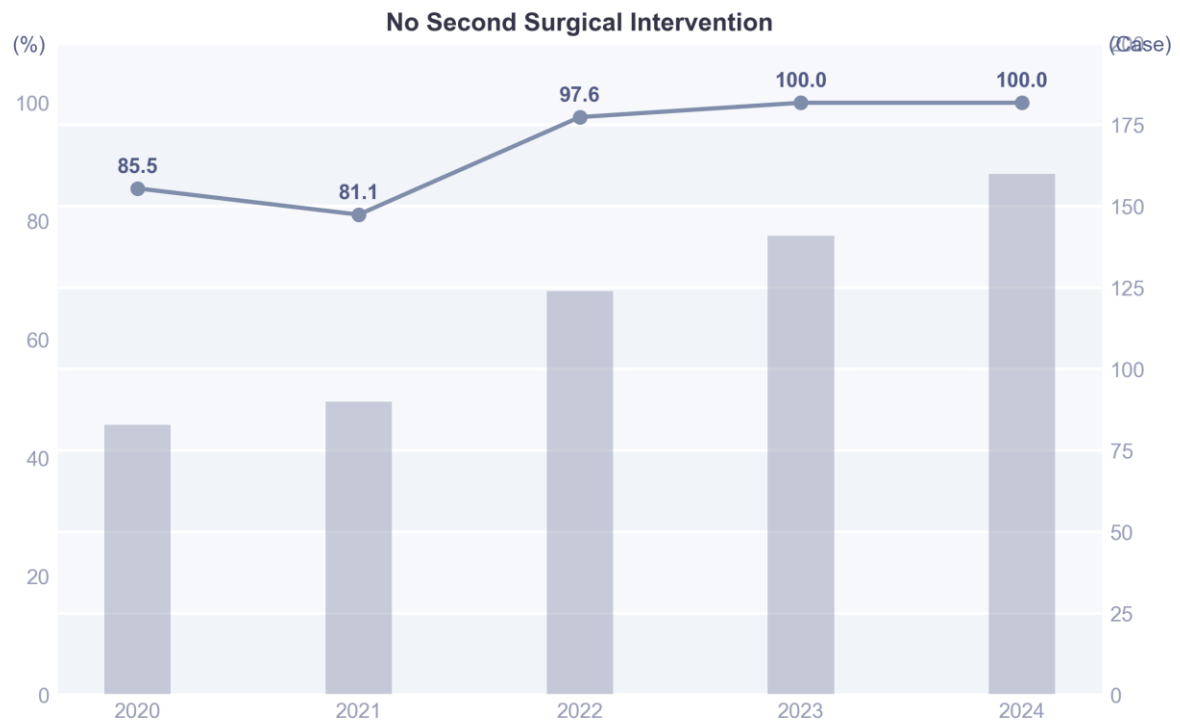
The rate of compliance with general anaesthesia requirements have improved significantly since 2023 and has achieved 100% in 2024.

## No Second Surgical Intervention

### Definitions

Patient should not be undergoing second trabeculectomy surgery within 1 year of surgery.

### Results



### Interpretation

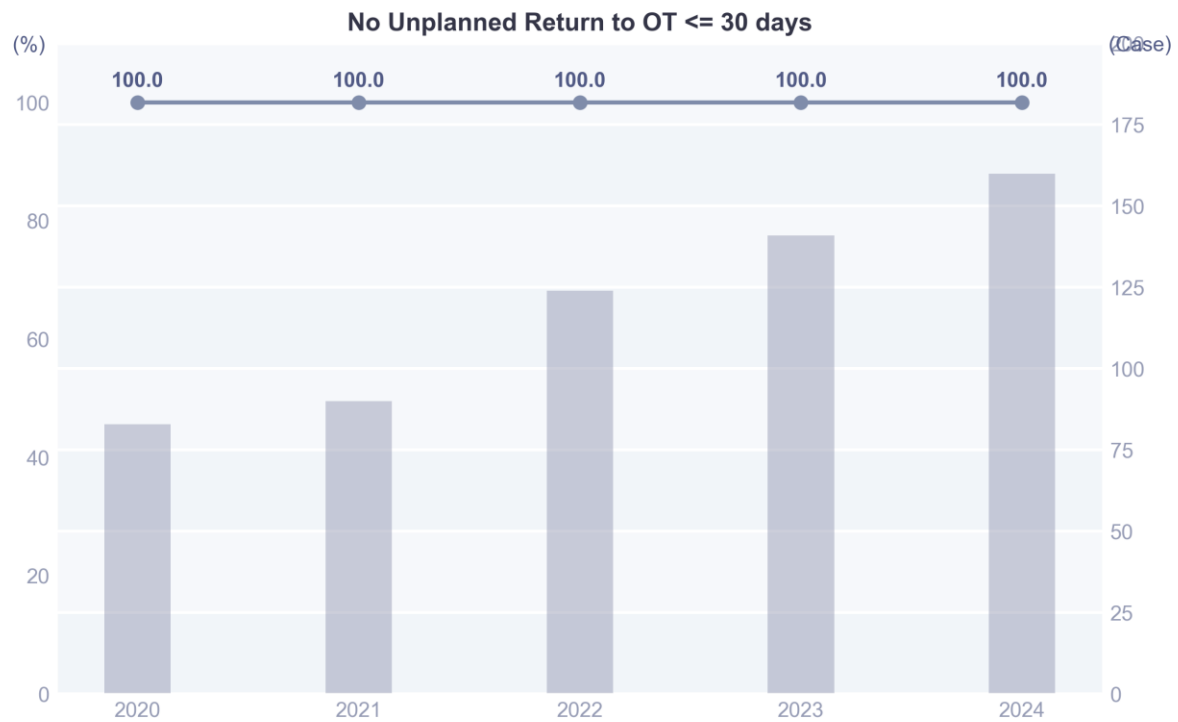
Percentage of cases that do not require second surgical intervention has increased over the years and achieved 100% in 2024.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

There was no incidence of unplanned return to OT in the past five years.

## **Orthopaedic Surgery**

## Diabetic Foot Ulcer

### Number of Patients with Diabetic Foot Ulcer (DFU)

#### Definitions

##### DIABETICS FOOT ULCER:

A diabetic ulcer is an open sore or wound resulting from poor circulation or lack of sensation due to nerve damage caused by elevated blood glucose levels.

The legs and feet are most at risk for these ulcers. Diabetes makes it hard for the body to heal itself, increasing the risk of wounds becoming chronic and raising the risk of infection.

Significantly, nonhealing diabetic ulcers result in a large number of amputations in Singapore. About two major limb amputations are carried out daily to remove lower limbs affected by diabetes-related ulcers or gangrene. (Source: Health Hub SG, [Diabetic Foot Ulcer: Symptoms and Treatment](#))

##### PATIENTS WITH DIABETIC FOOT ULCER:

Collected by 1) ICD-10 diagnosis codes: E10.52, E10.73, E11.52, E11.73, E13.52, E13.73, E14.52, E14.73

2) Exclusion criteria: upper limb ulcer by TOSP codes LB702U, SB701U, SB702U, SB803U, SB805U, SB807U, SB823B, SB848M

#### Results

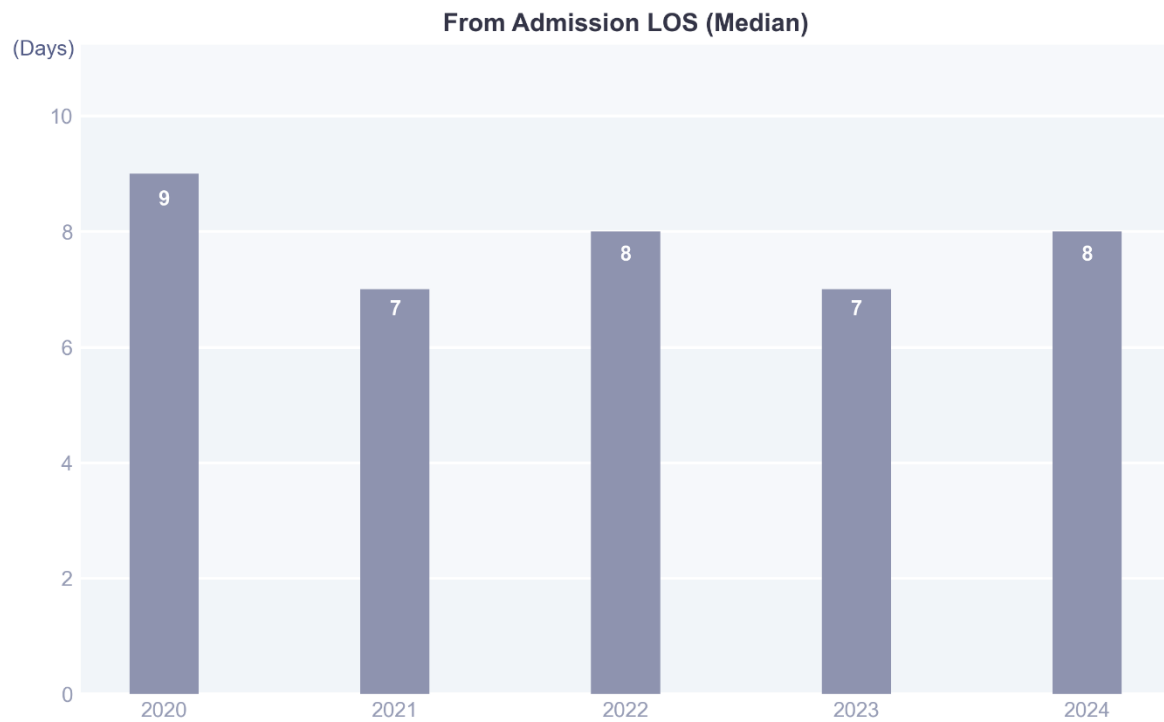


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median LOS has improved since 2020 from 9 days to 7 or 8 days.





### *Interpretation*

Length of stay compliance rate is relatively stable from 2022 to 2023 and declined slightly in 2024

## In-Hospital Survival

### *Definitions*

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

## Results



## Interpretation

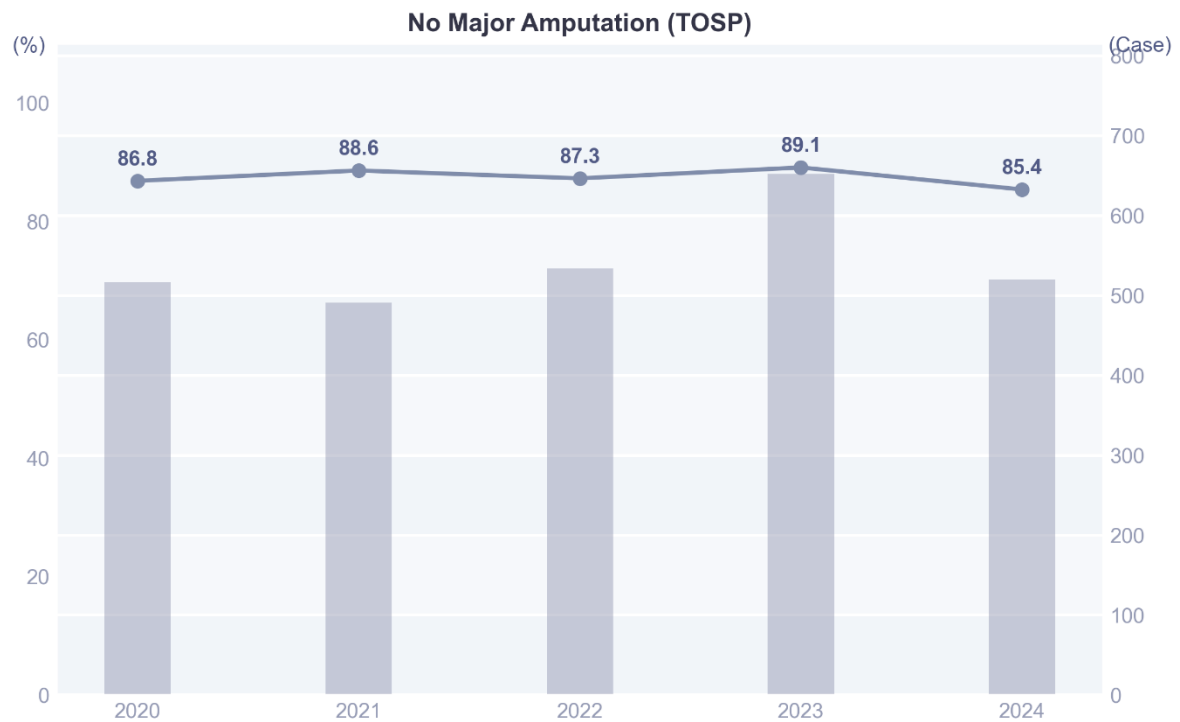
In Hospital survival rates improved since 2021

## No Major Amputation

### Definitions

Patients should not have major amputation of limbs, identified by TOSP codes.

### Results



### Interpretation

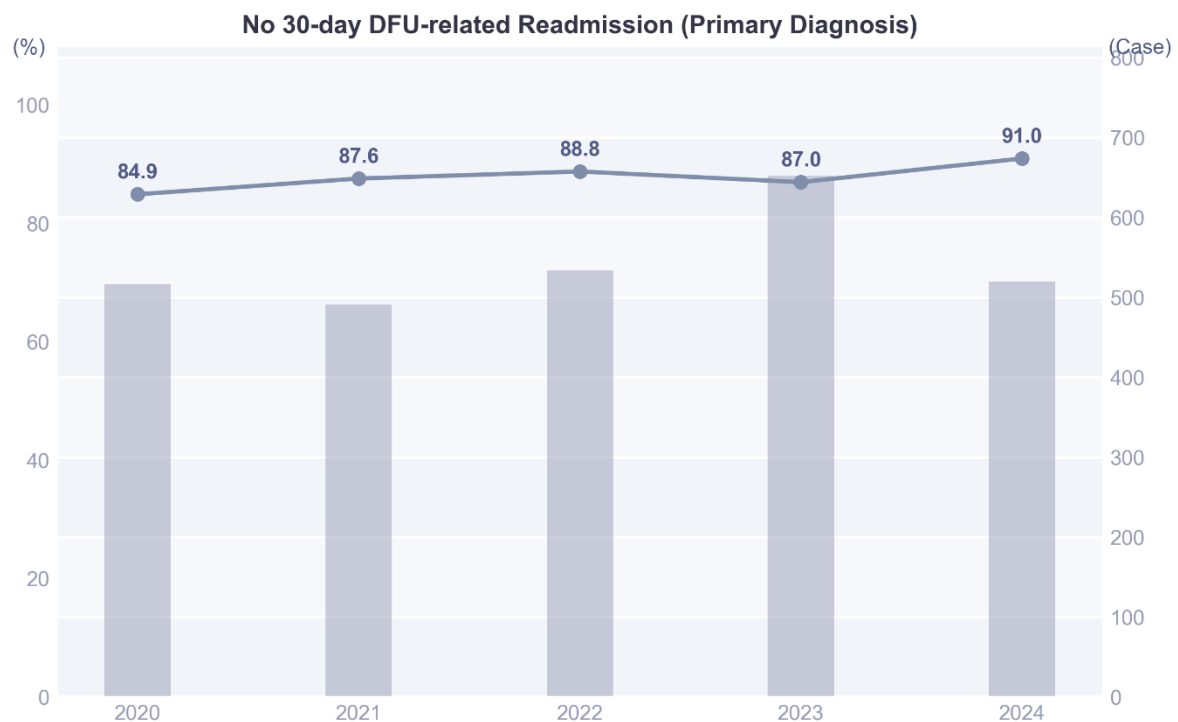
No Major Amputation rates are stable at above 85% but have declined in 2024

## No DFU Related Readmission Within 30 Days (Primary Diagnosis)

### Definitions

Patients should not be readmitted to the hospital via the emergency department within 30 days following their initial discharge due to DFU by primary diagnosis codes. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

No 30 Day DFU-related Readmission rates have improved over the years except in 2023.

## Hip Fracture

### Number of Patients with Hip Fracture

#### Definitions

**HIP FRACTURE:** A hip fracture refers to a break in the proximal femur, often affecting the neck or intertrochanteric region. Less commonly, the subtrochanteric region may be involved as well. It is often the result of trauma, such as a fall, and in the elderly, is often associated with osteoporosis.

**PATIENTS WITH HIP FRACTURE:** Collected by DRG codes:

Complex case: I03A, I8A

Simple case: I03B, I08B

Admission Type Description: Emergency

Include cases of patients age > 60 years old

Exclude cases with Primary Diagnosis: C795 Secondary malignant neoplasm of bone and bone marrow

#### Results

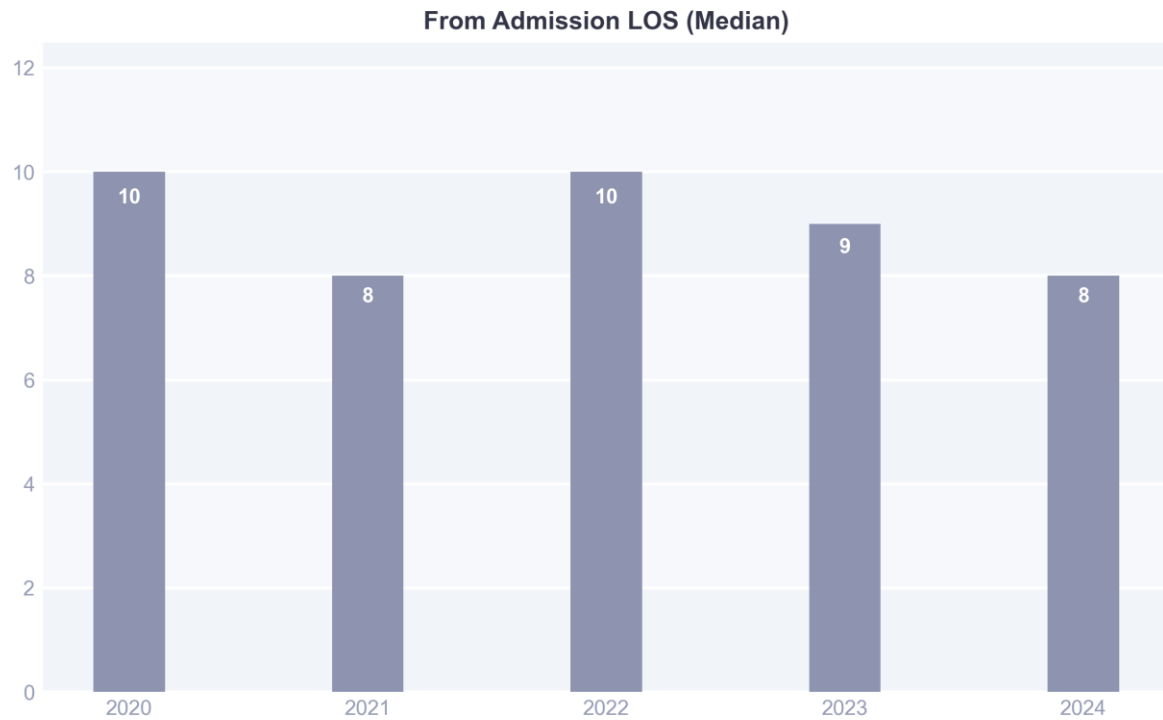


## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median LOS has declined since 2022 till 2024

## Survival Rate within 30 Days from Admission (A&E)

### Definitions

The proportion of patients who survive within 30 days from admission in the emergency department, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

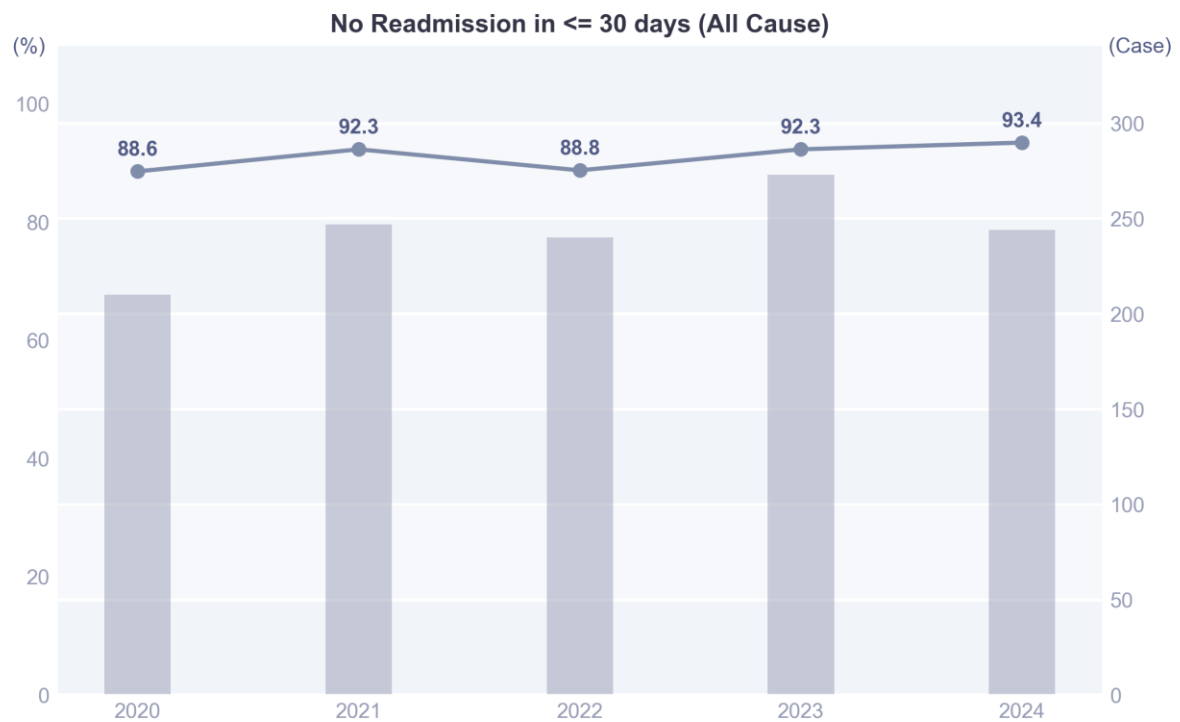
Survival rate within 30 days from A&E Admission is relatively constant across all years.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

No emergency readmission rate within 30 days due to any cause has improved since 2022.



## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause



### Interpretation

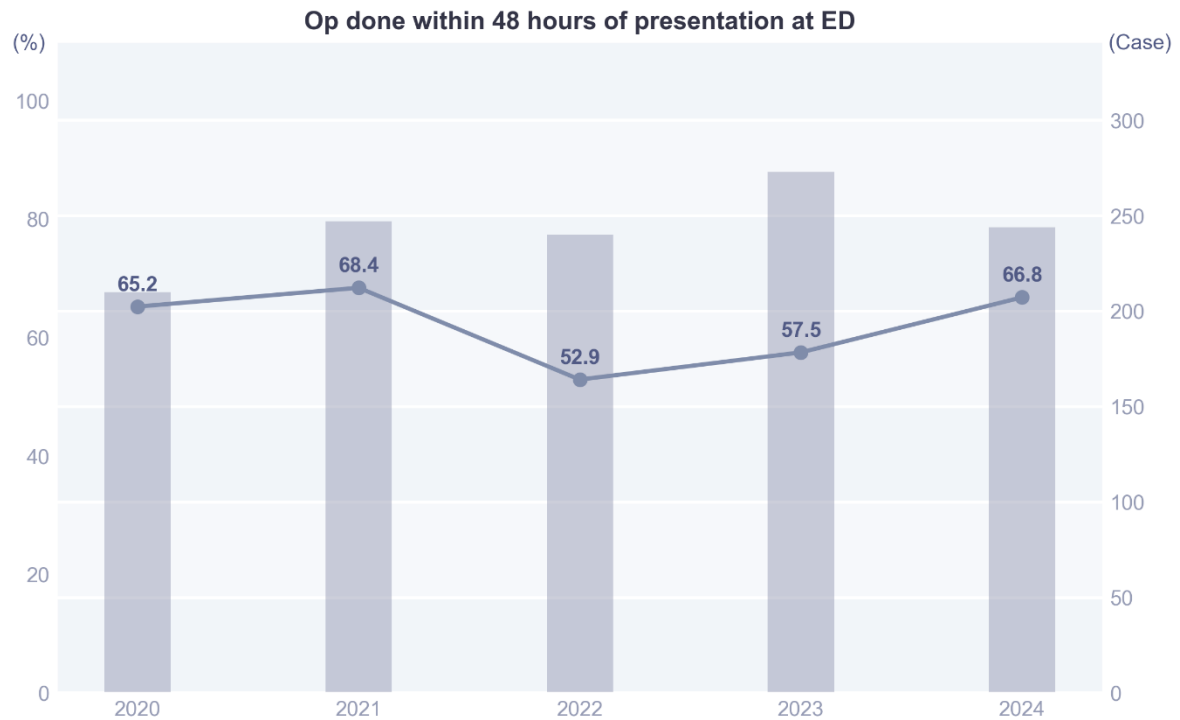
No unscheduled return to OT within 90 days due to hip related cause has improved over the years and reached 100% from 2022 to 2024.

## Compliance of Process and Medication

### Definitions

**OPERATION DONE WITHIN 48 HOURS OF PRESENTATION AT ED:** The time stamp of starting operation minus the time stamp of registration at A&E should be  $\leq 48$  hours

### Results



### Interpretation

OP done within 48 hours from presentation at ED has improved from 2022 to 2024.

### Definitions

**OPERATION DONE WITHIN  $\leq 48$  HOURS OF ADMISSION:** Operation starts time stamp minus (-) the point of admission should be  $\leq 48$  hours

### Results



### Interpretation

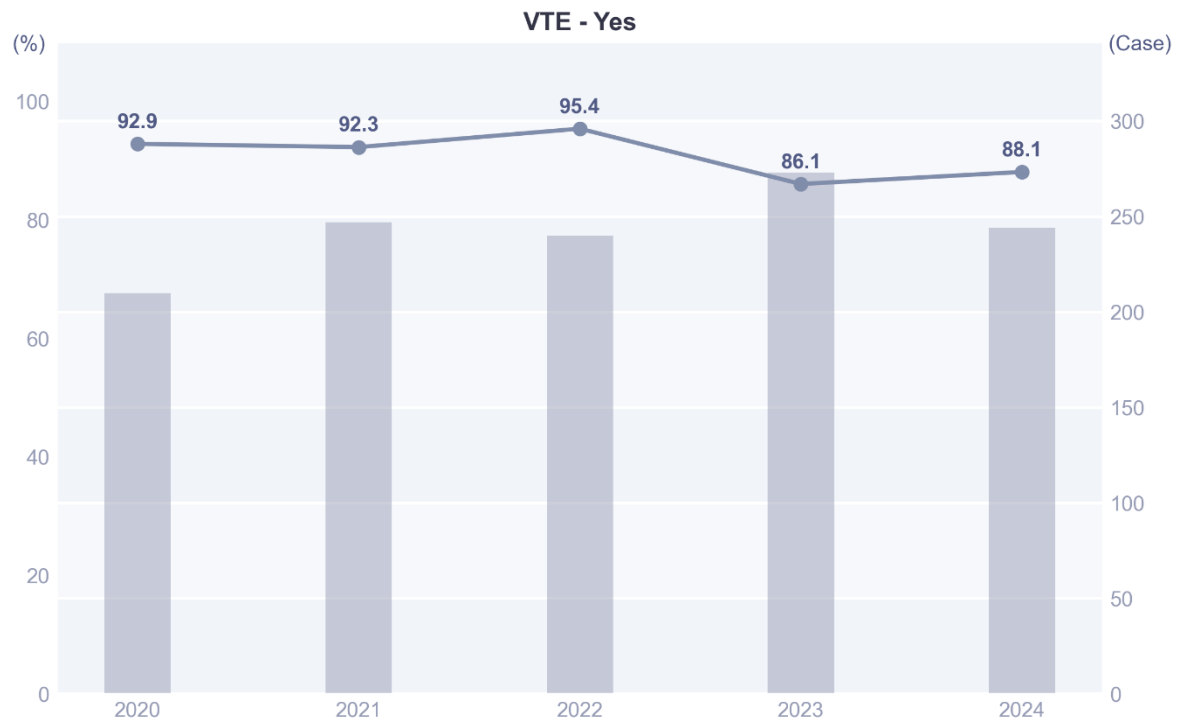
OP done within 48 hours from admission has improved from 2022 to 2024.

### Definitions

**VTE PROPHYLAXIS ORDERED:** Patients should have taken VTE prophylaxis during their admission stay in the hospital

VTE Prophylaxis includes Calf pumps, Plavix (Clopidogrel), Warfarin, Clexane (Enoxaparin), Aspirin, Anti DVT, Stocking, Heparin and Rivaroxaban

### Results



### Interpretation

VTE given during admission stay has declined in 2023 and 2024. Operations and pharmacy team have been informed to check and ensure VTE bill codes are charged.

### Definitions

**OSTEOPOROSIS ASSESSMENT:** Patients should receive Osteoporosis Assessment, including assessment on Vitamin D, Calcium, Bone Mineral Density.



### Interpretation

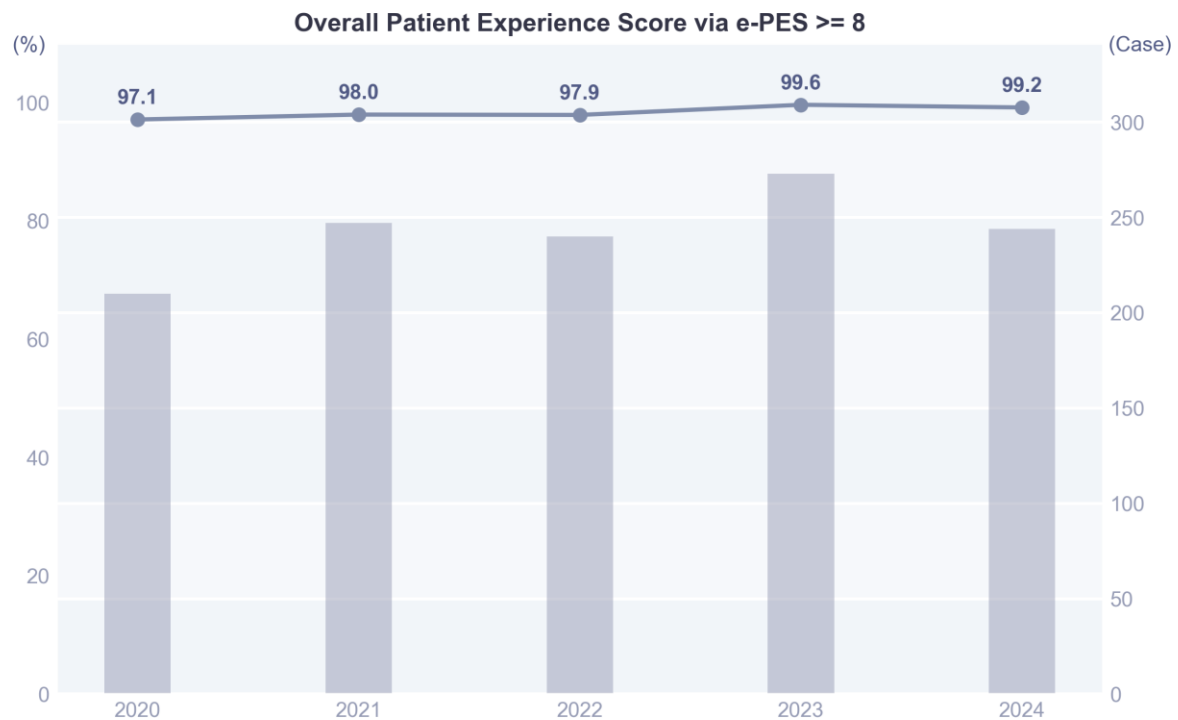
Osteoporosis Assessment during admission stay has improved across the years

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Patient Experience Score  $\geq 8$  has a high compliance rate throughout the years

## Total Knee Replacement

### Number of Patients with Total Knee Replacement

#### Definitions

##### **PATIENTS WITH TOTAL KNEE REPLACEMENT:**

Collected by MOH TOSP Code (Single or multiple TOSPs):

SB810K, SB716K

#### Results



#### Interpretation

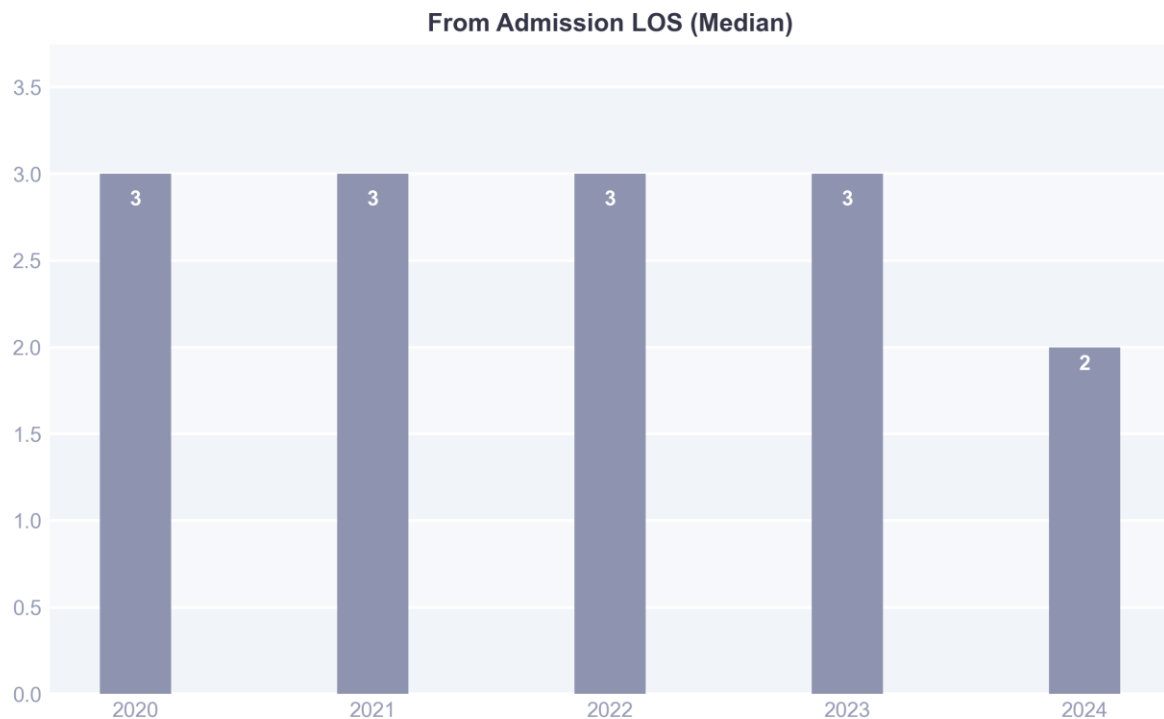
Case volume for TKR is continuously growing by around 50-100 patients per year.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median LOS for TKR are stable at 3 days with exception of 2024 where de-centralization effort in collaboration with NUHS@Home and St. Luke's Hospital is put in place. Due to the new effort, median LOS is reduced to 2 days.

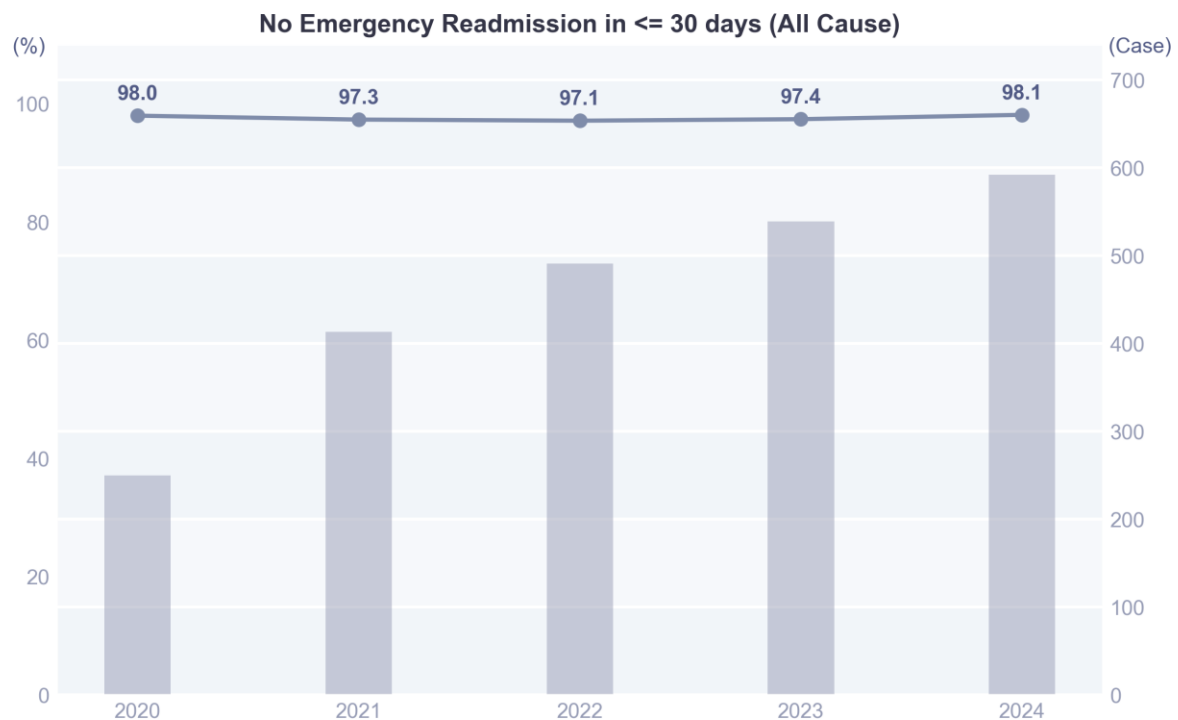


## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

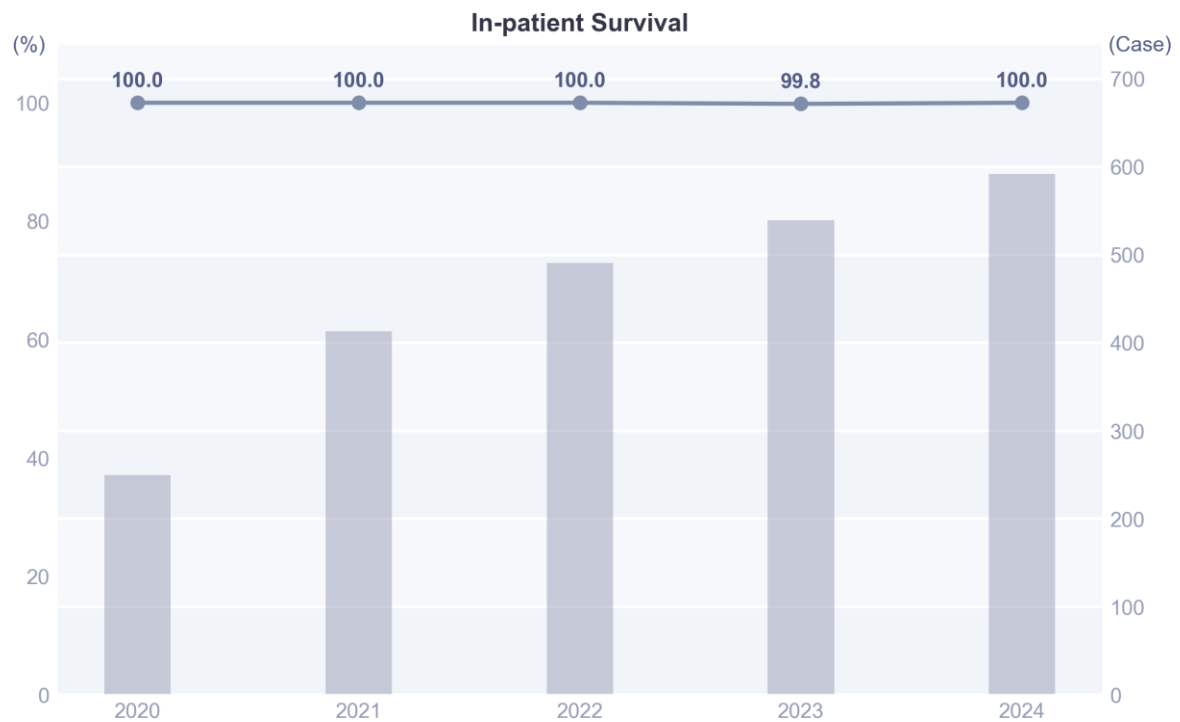
Percentage of patients with emergency readmission within 30 days of discharge is stable throughout 5 years of data at around 2-3%.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

There is no in-hospital mortality in the past five years except for 1 case in 2023.

## No Complication within admission or 30 days from the initial discharge

### Definitions

**Complication** is defined as any record of secondary diagnosis during the current admission that does not present on admission, and primary of subsequent readmissions within 30 days from the initial discharge.

Patients should not have complications within the hospital admission or within 30 days of initial discharge.

### Results



### Interpretation

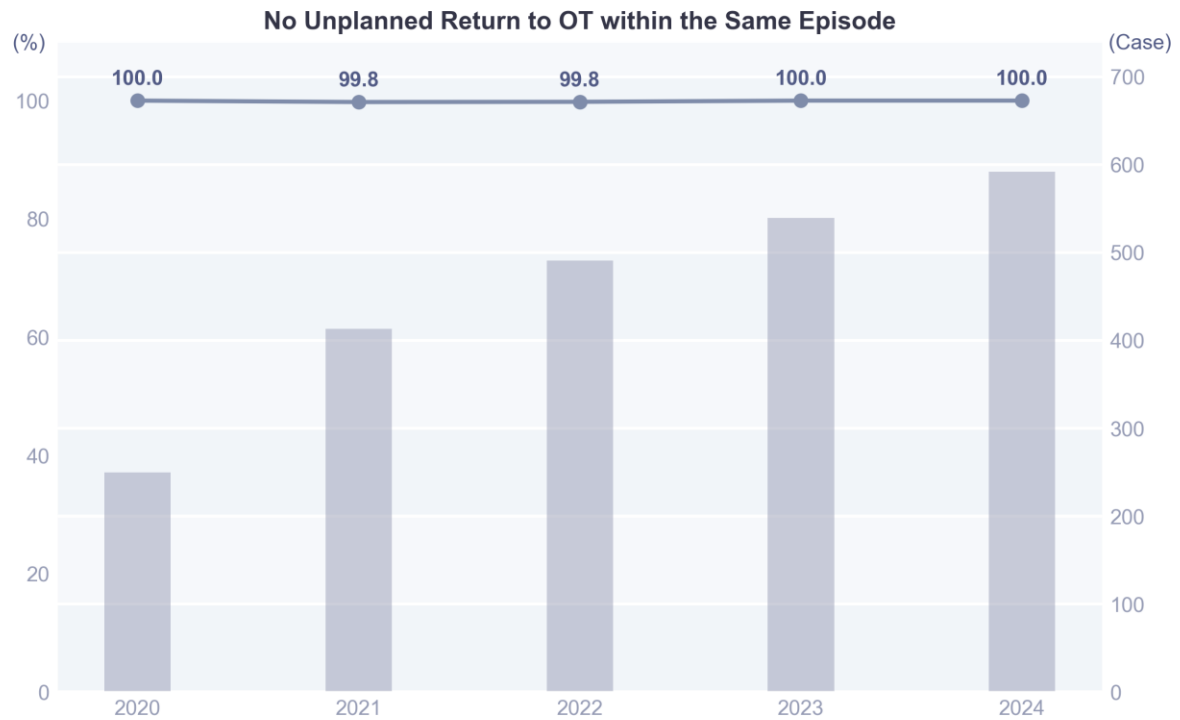
Percentage of patients having no complication within 30 days had been stable at around 2%.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

Unplanned return to OT is very rare in TKR patient with only 2 encounters for the past 5 years.

## Total Hip Replacement

### Number of Patients with Total Hip Replacement

#### Definitions

##### PATIENTS WITH TOTAL HIP REPLACEMENT:

(A) By MOH TOSP Code (Single or multiple TOSPs): SB839H, SB723H

(B) Elective cases only (by "Priority" of TOSP Surgical codes)

(C) Exclusion criteria: Cases with any diagnosis of hip fracture (S720x, S721x, S722x); Aged < 18 years

#### Results



#### Interpretation

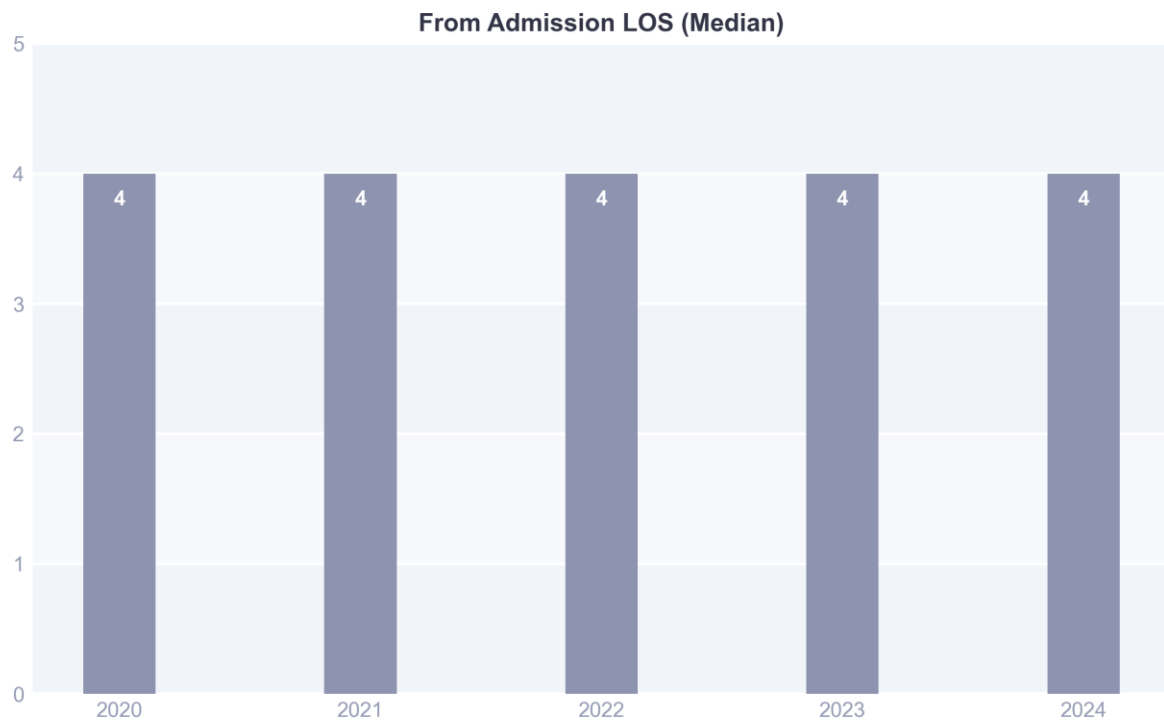
Case load is increasing trend from 2020-2022 before stabilizing at around 65-70 patients per year.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

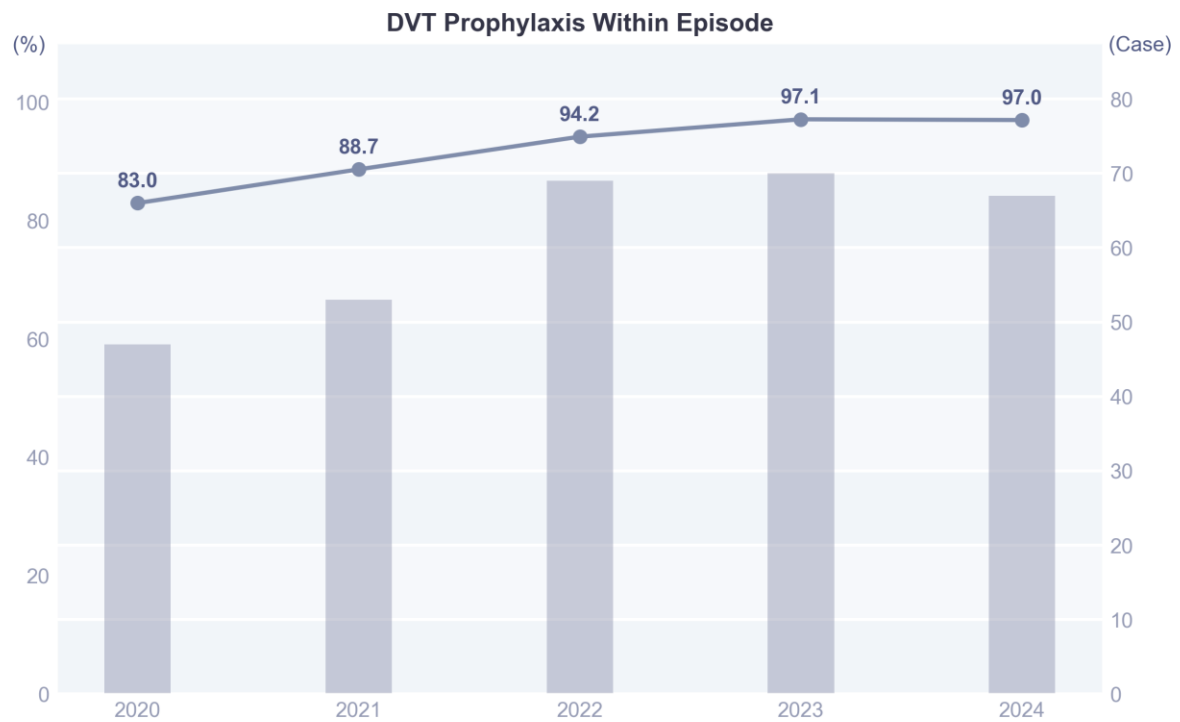
Median LOS stay the same throughout the 5 years data at 4 days.

## Appropriateness of Care

### Definitions

**DVT PROPHYLAXIS WITHIN EPISODE:** DVT Prophylaxis is administered for patient during the hospital admission

### Results



### Interpretation

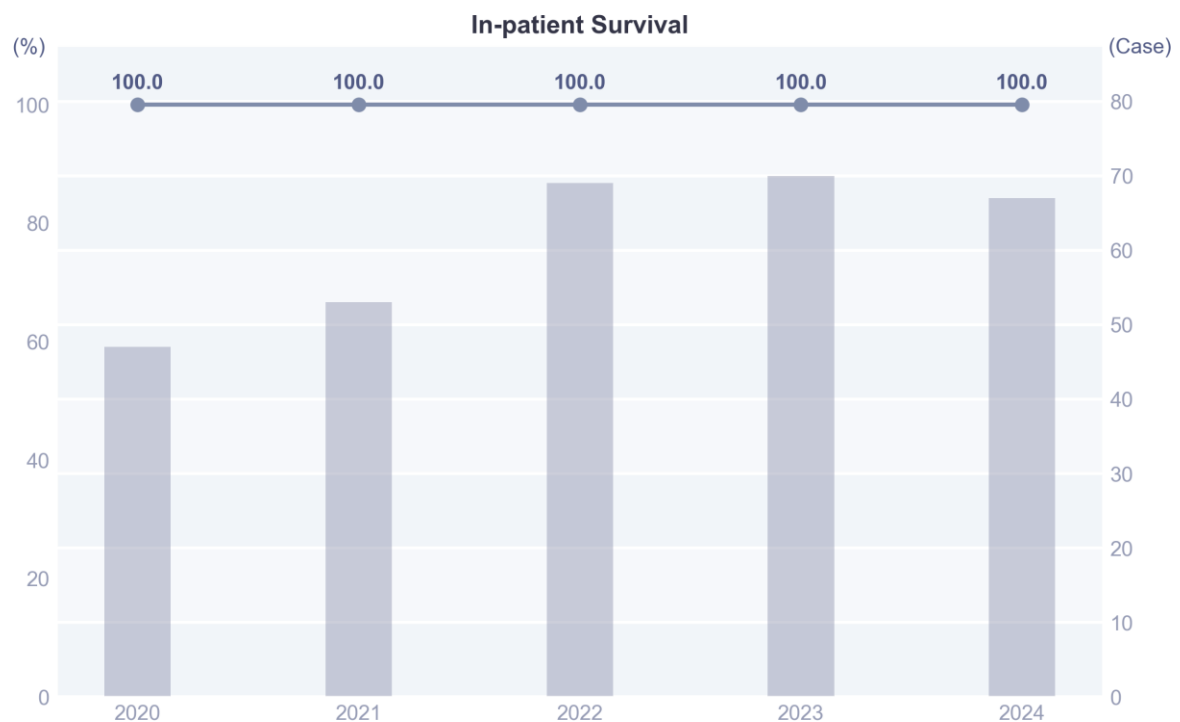
DVT Prophylaxis within Episode is on increasing trend for the 5 years data between 2020 to 2024.

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

There is no inpatient mortality within THR patients



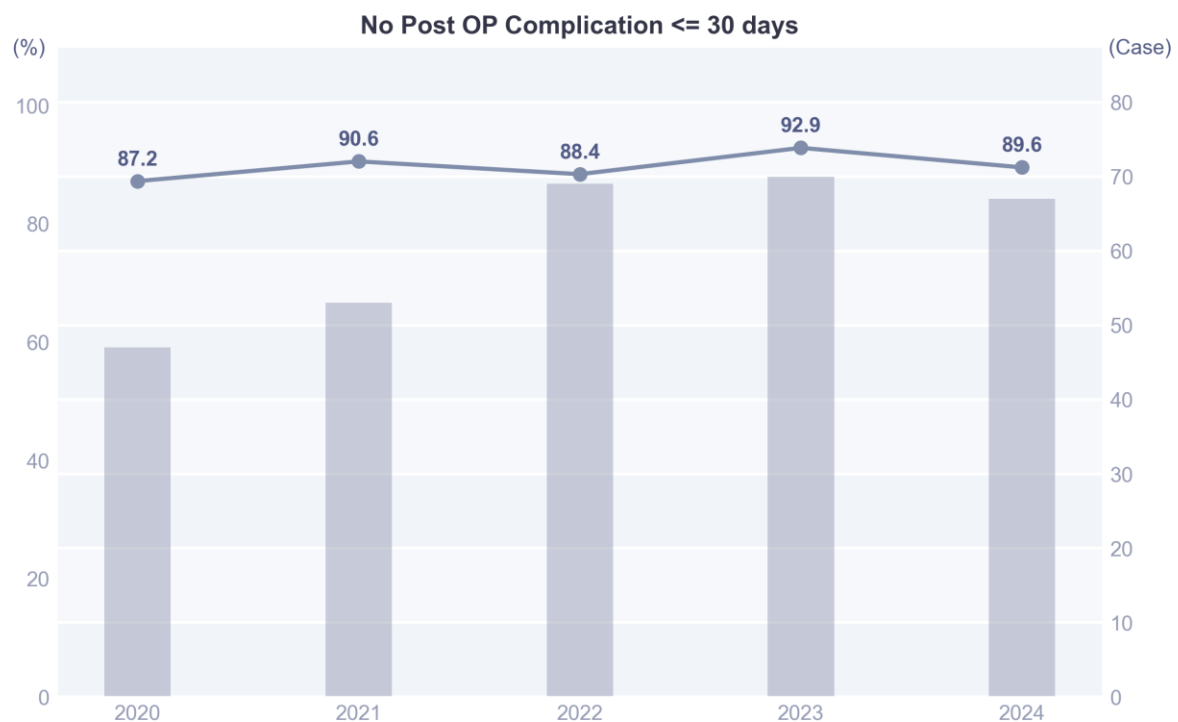
## No Complication within admission or 30 days from the initial discharge

### Definitions

**Complication** is defined as any record of secondary diagnosis during the current admission that does not present on admission, and primary of subsequent readmissions within 30 days from the initial discharge.

Patients should not have complications within the hospital admission or within 30 days of initial discharge.

### Results



### Interpretation

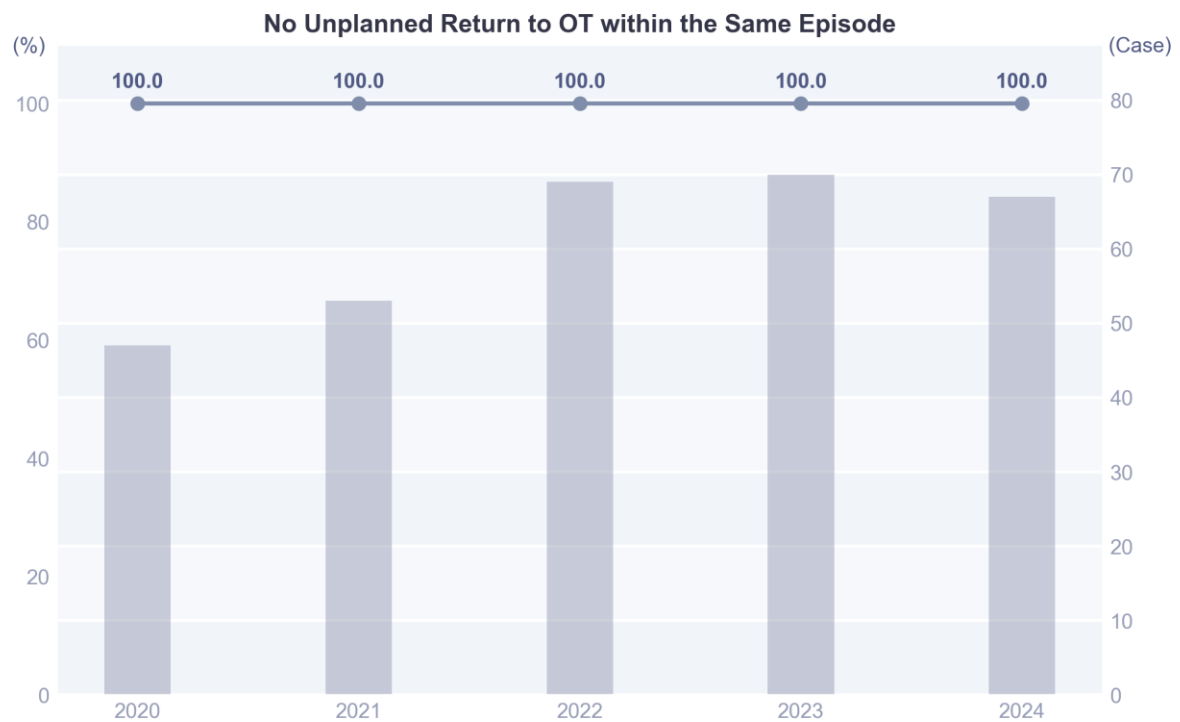
Patients with post-OP complication within 30 days of discharged are ranging between 7% to 13% per year.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

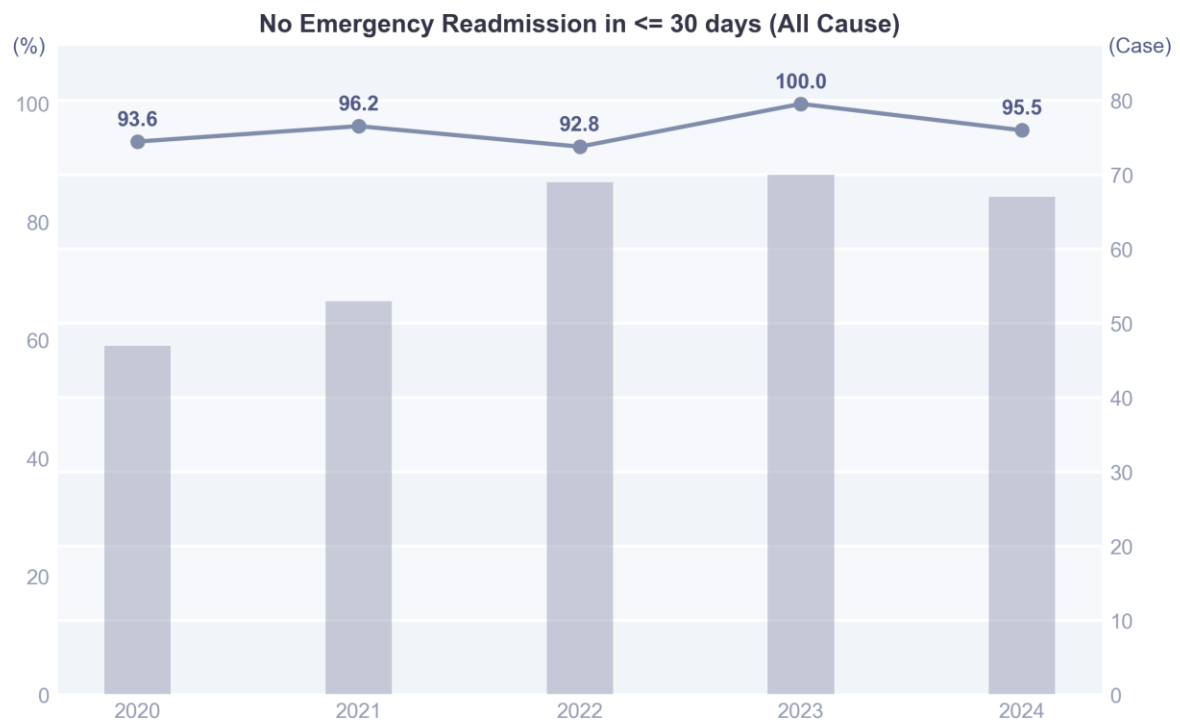
There is no unplanned return to OT within THR patients

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

Within 2020 to 2024, patients with emergency readmission within 30 days of discharge are less than 7%.

## Hand Fracture

### Number of Patients with Hand Fracture

#### Definitions

##### **PATIENTS WITH HAND FRACTURE:**

Collected (A) By MOH TOSP Code (Single or multiple TOSPs):

SB703H, SB704H, SB705H, SB706H, SB710H, SB711H, SB712H, SB713H, SB714H, SB715H, SB716H, SB717H, SB801H, SB802H, SB814H

(B) Elective cases only (by "Priority" of TOSP Surgical codes)

(C) Exclusion criteria: Aged < 18 years; Patient with non-HF TOSP

#### Results



#### Interpretation

Case load for hand fracture is in increasing trend between 2020 – 2022 before stabilizing around 100 cases per year.

## Appropriateness of Care

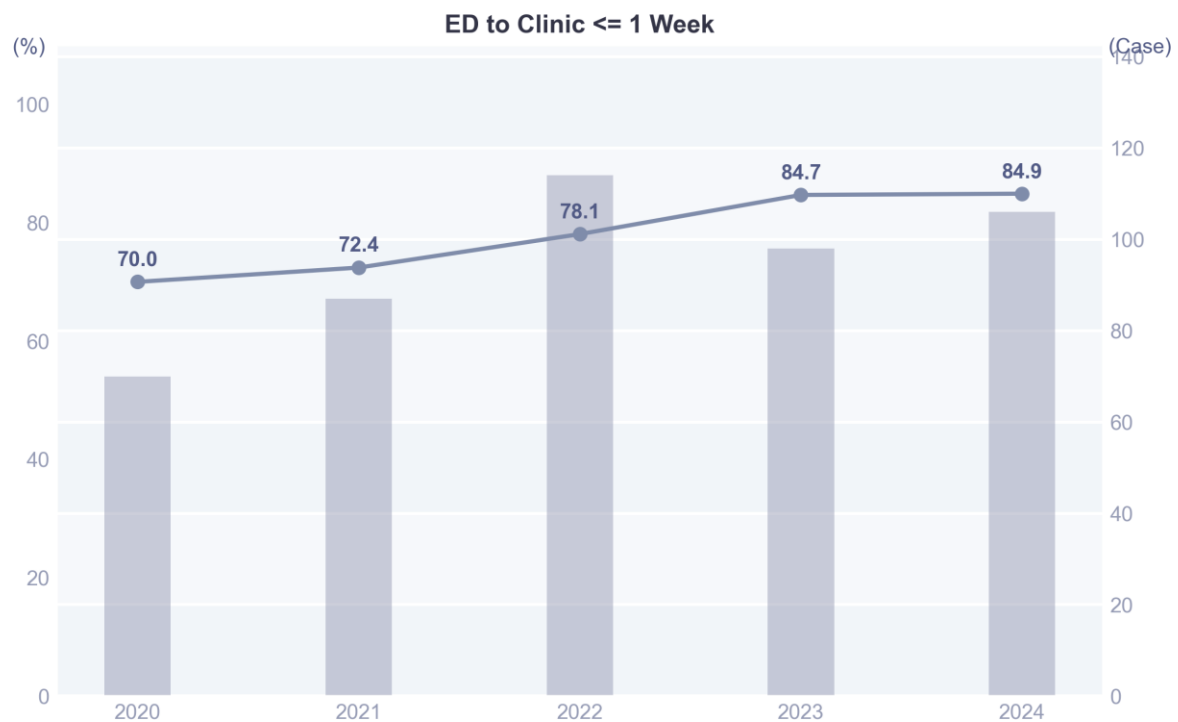
### Definition

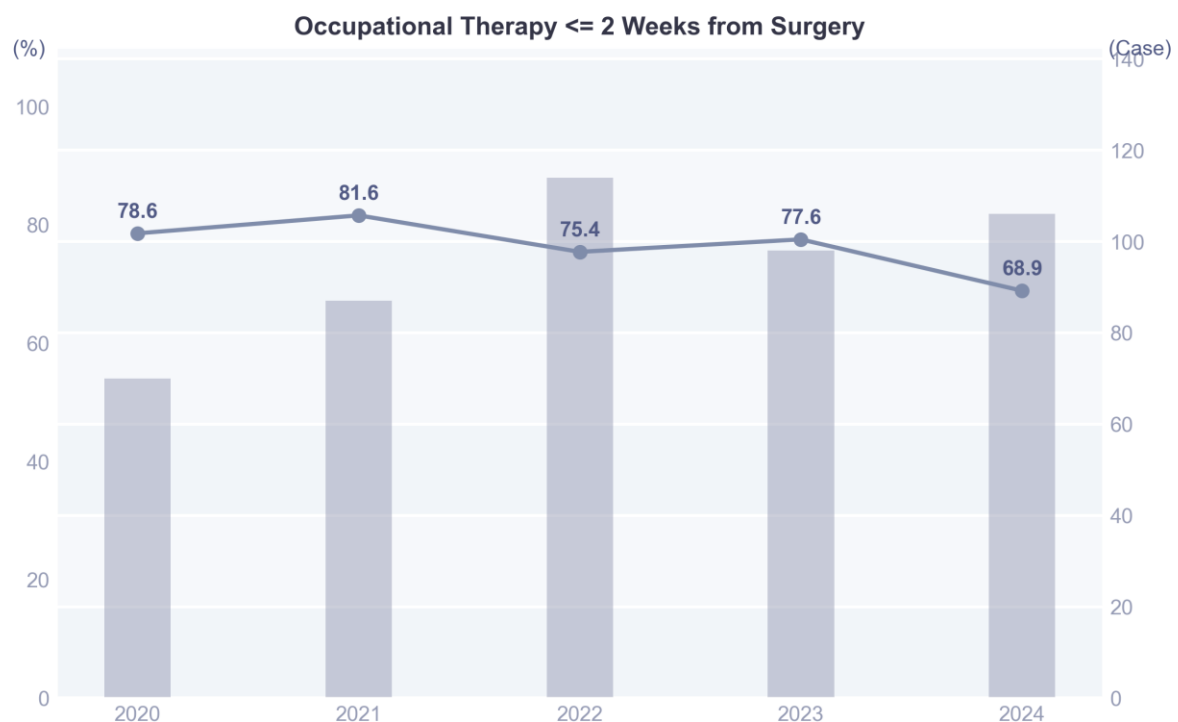
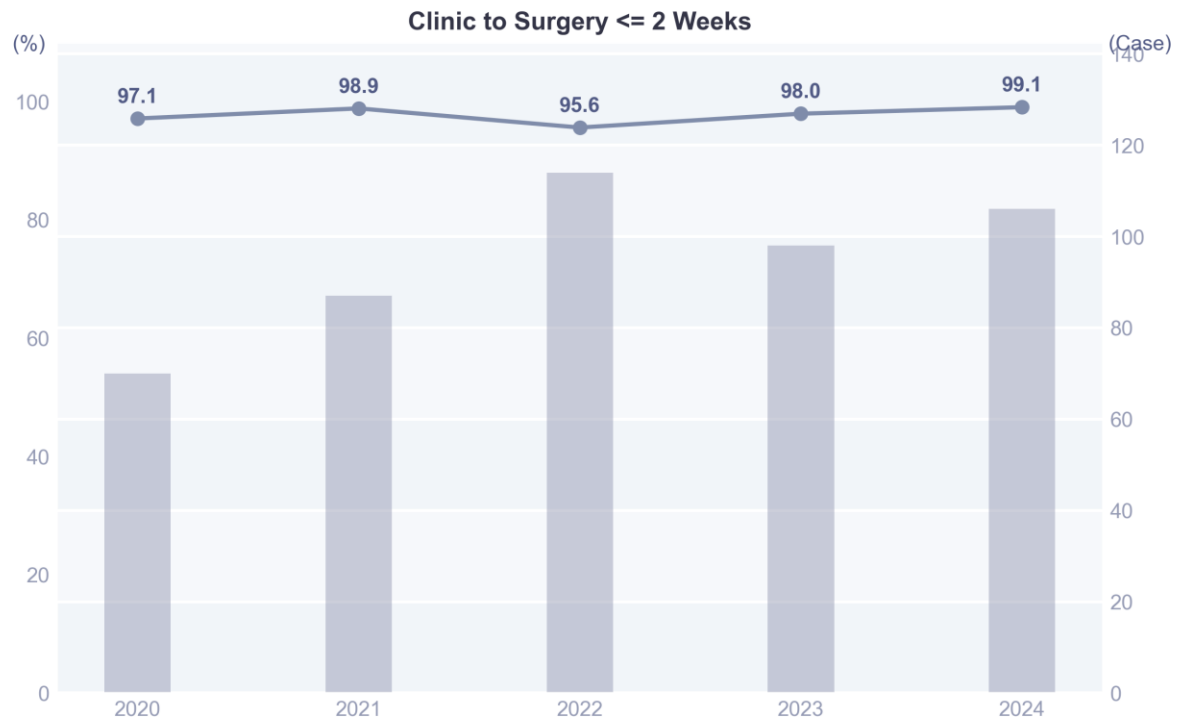
**ED TO CLINIC  $\leq$  1 WEEK:** Patients should be given Outpatient Clinic appointment within 1 week of attending Emergency Department relevant to the procedure. The measurement is based on the actual SOC attendance rate following ED presentation.

**CLINIC TO SURGERY  $\leq$  2 WEEKS:** If Surgery is required, patients should be given Surgery appointment within 2 weeks of last Outpatient Clinic. The measurement is based on the actual Surgery rate following SOC attendance, if Surgery is ordered.

**OCCUPATIONAL THERAPY  $\leq$  2 WEEKS FROM SURGERY:** Patients should be given referral to Occupational Therapy and attend Occupational Therapy within 2 weeks of procedure. The measurement is based on the actual Occupational Therapy rate following Surgery, if Surgery is performed.

### Results





### Interpretation

Percentage of patients having Clinic to Surgery  $\leq$  2 weeks had been stable at above 90% while ED to Clinic  $\leq$  1 week is on increasing trend for the past 5 years.

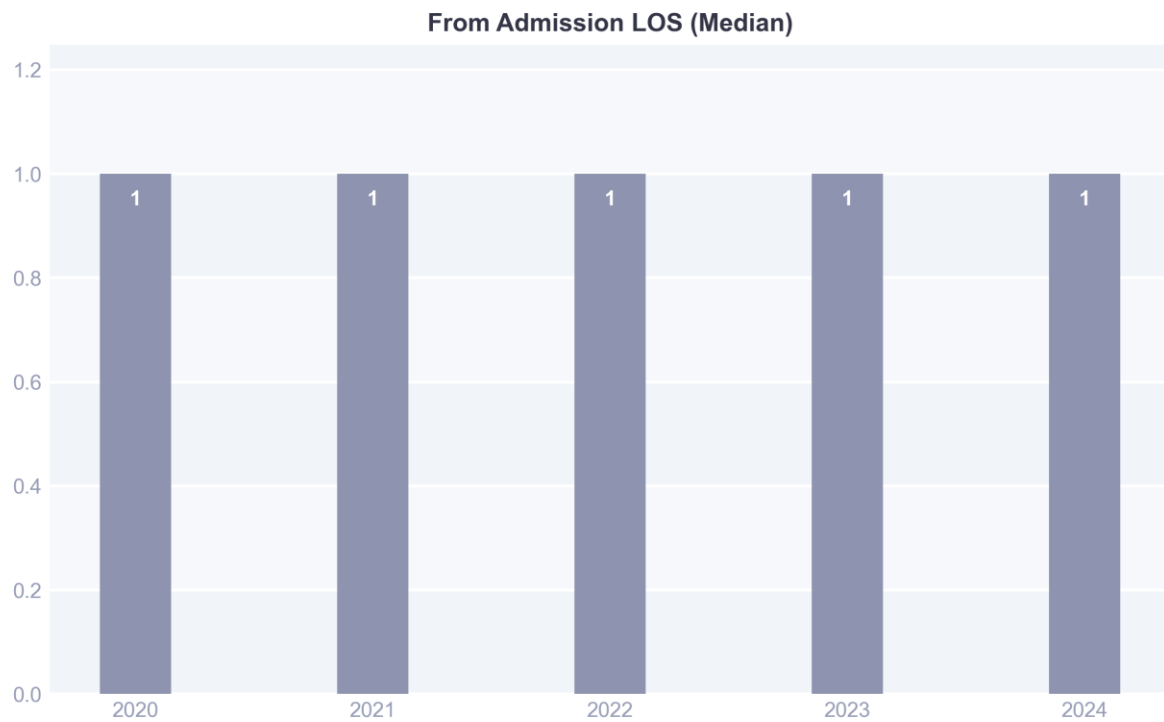
Occupational therapy is an important rehabilitation step for patients to regain functionality in fine movement. Upon discharge, patients should be referred to Occupational Therapy and to start the first rehabilitation within 2 weeks of Surgery. Percentage of patients attending Occupational Therapy within 2 weeks of Surgery is roughly above 75% with exception of 2024 where it falls to 69%.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

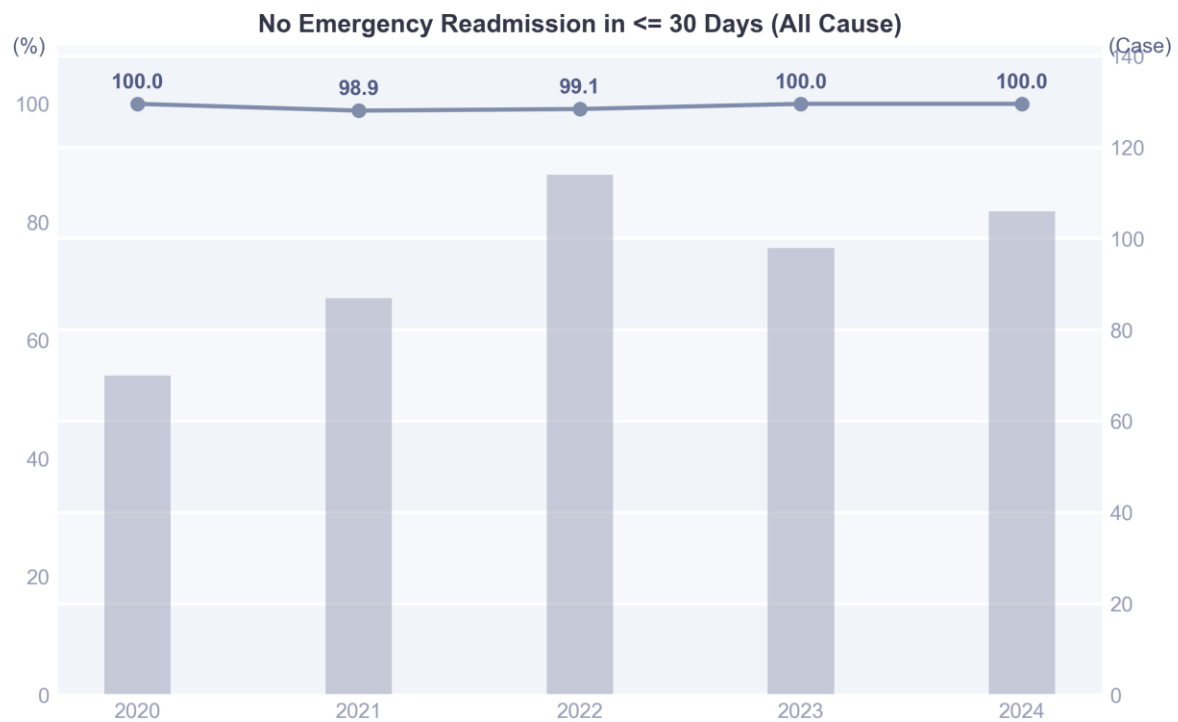
Patients with Hand Fracture procedure should stay  $\leq 1$  Days (Total LOS is the duration from Date of Admission to Date of Discharge). Median LOS for Hand Fracture are 1 day throughout the last 5 years.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

Percentage of patients having no emergency readmission within 30 days had been stable at 99% and above.

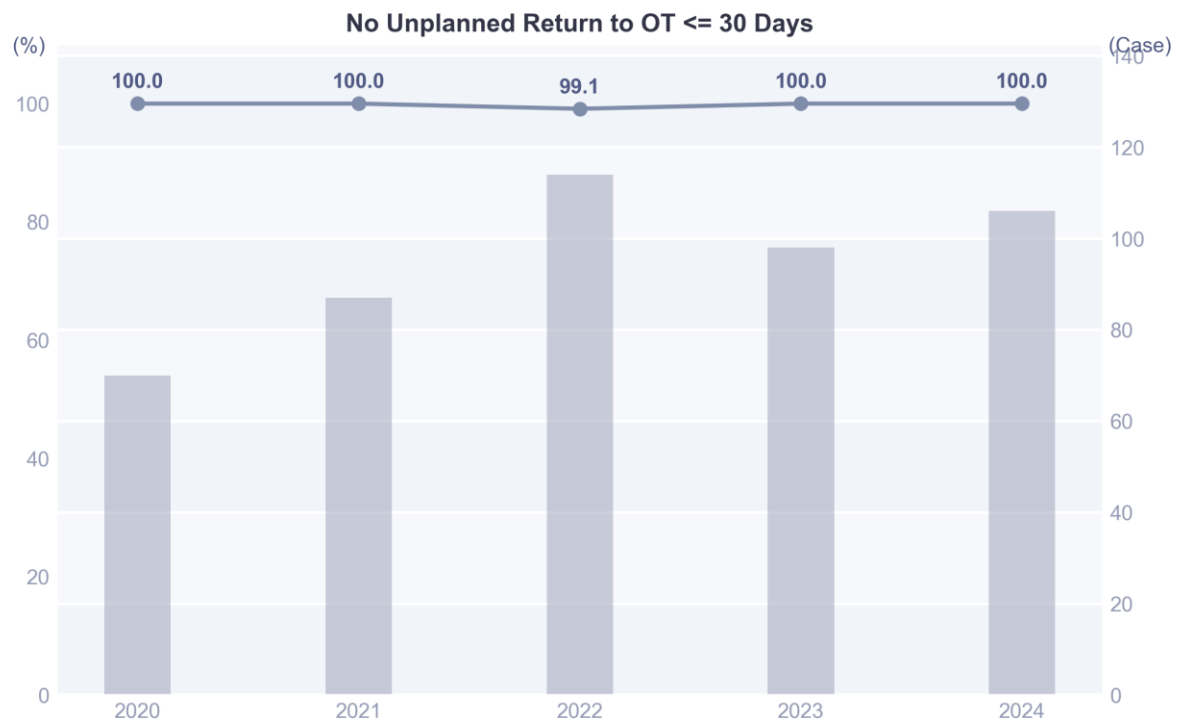


## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

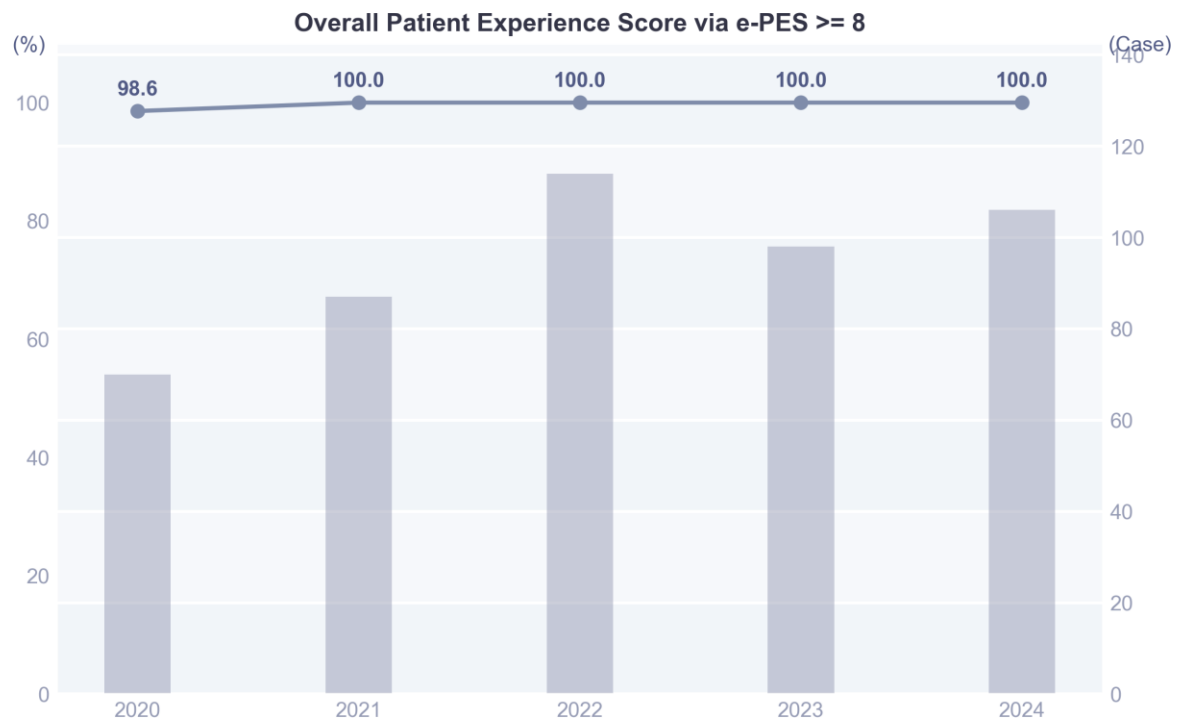
Percentage of patients having no unplanned return to operation theatre (OT) within 30 days had been stable at 99% and above.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

PES had been constantly high for Hand Fracture reaching 100% for the last 4 consecutive years.

## **Paediatrics**

## Bronchiolitis (Child, < 24 months)

### Number of Patients with Bronchiolitis (Child, < 24 months)

#### Definitions

**BRONCHIOLITIS:** xxx

**PATIENTS WITH BRONCHIOLITIS (CHILD, <24 MONTHS):**

Collected by: Diagnosis Code Group J21

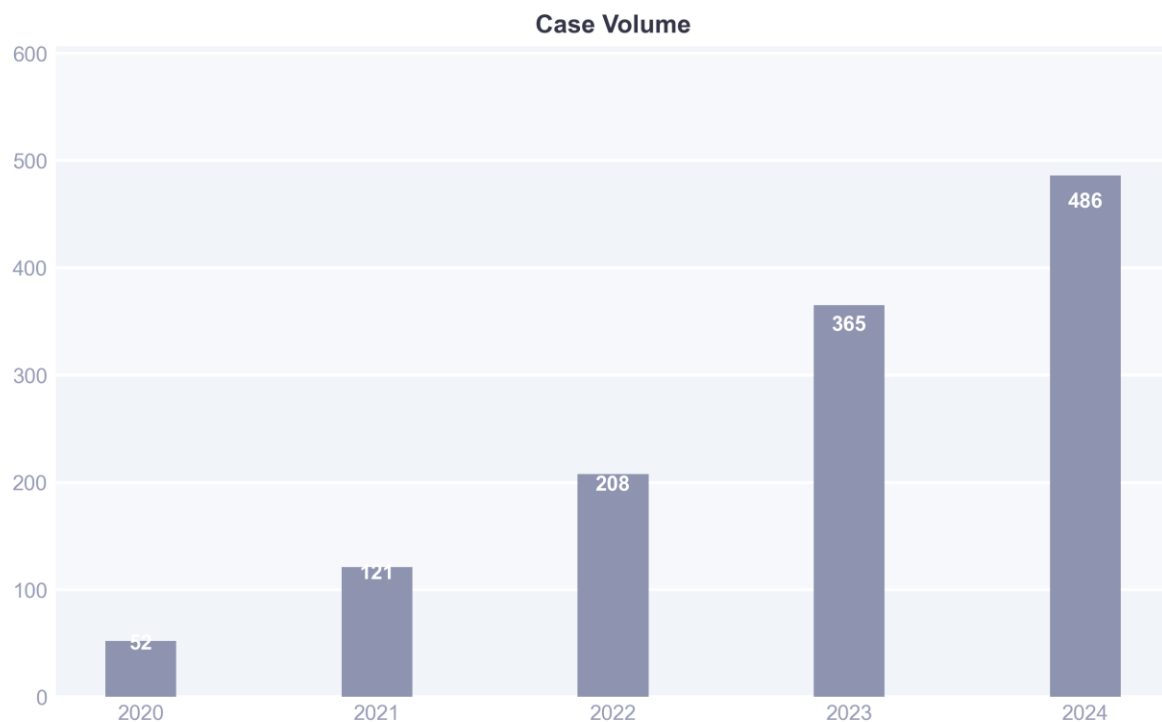
Dept NSPMPM Paediatrics

Inpatient cases only

Treatment Category  $\neq$  ICU/HD

Patient Age on Admission < 24 months

#### Results



#### Interpretation

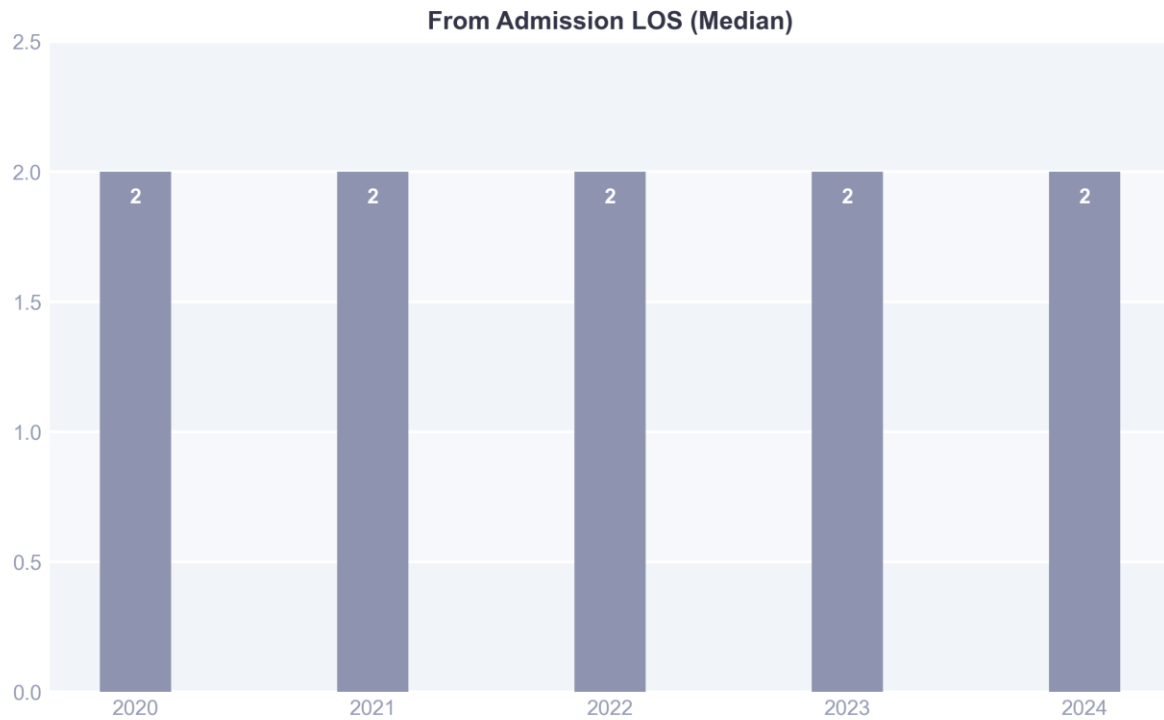
Bronchiolitis case load in paediatric had been growing on alarming rate of ~800% over 5 years period.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Bronchiolitis has short LOS with median of 2 days.

## Appropriateness of Care

### Definitions

**NO CHEST XRAY:** No Chest X-Ray is done for patient during the hospital admission

**NO BLOOD CULTURES:** No Blood Culture is done for patient during the hospital admission

**NO FULL BLOOD COUNT:** No Full Blood Count is done for patient during the hospital admission

**NO METERED DOSE INHALER / SPACE CHAMBER:** No Metered Dose Inhaler / Space Chamber is given for patient during the hospital admission

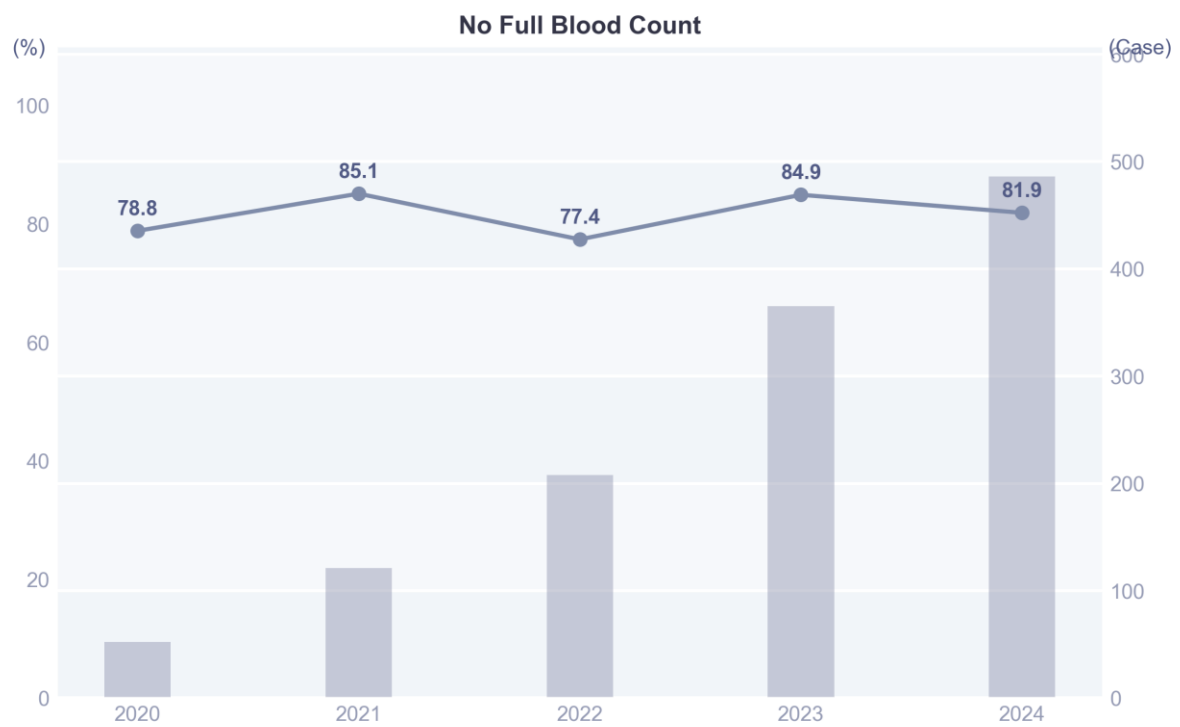
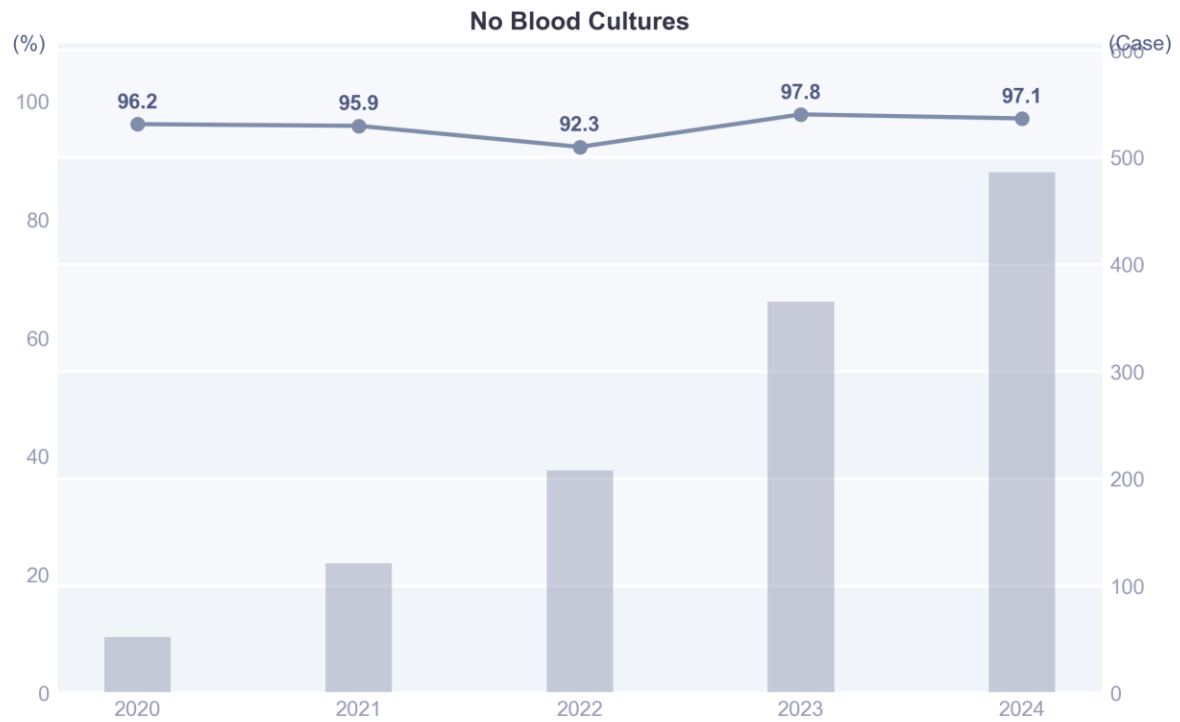
**NO ANTIBIOTICS:** No Antibiotic is given for patient during the hospital admission

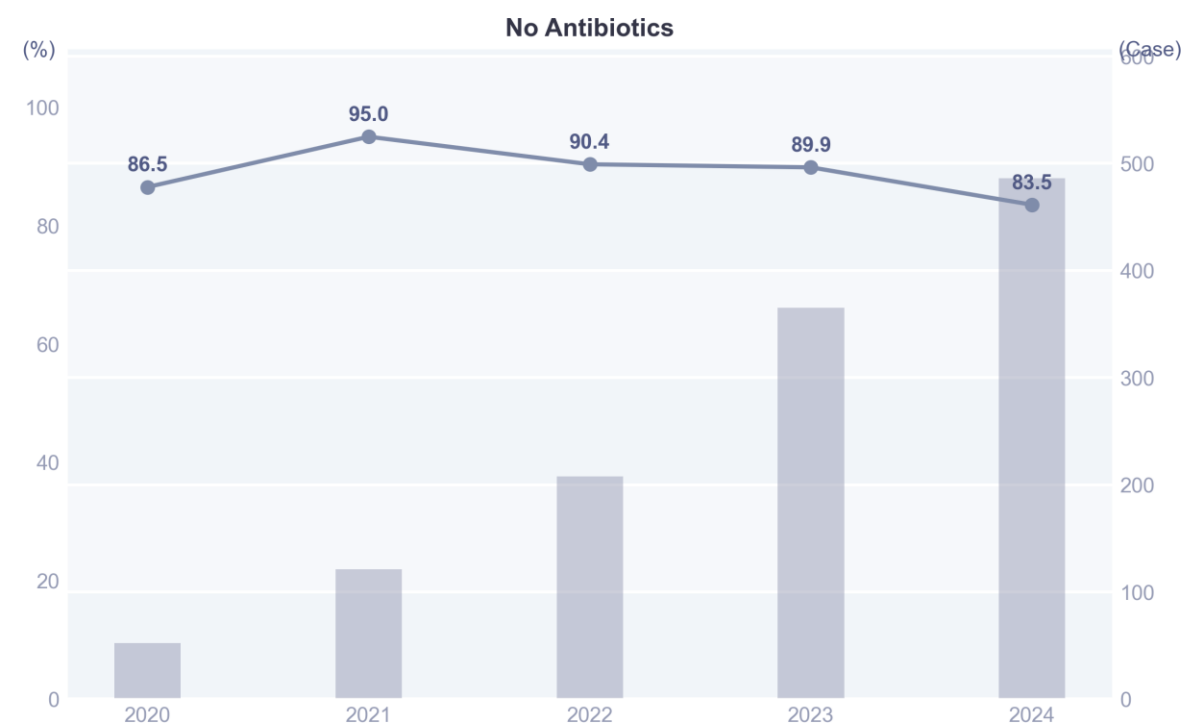
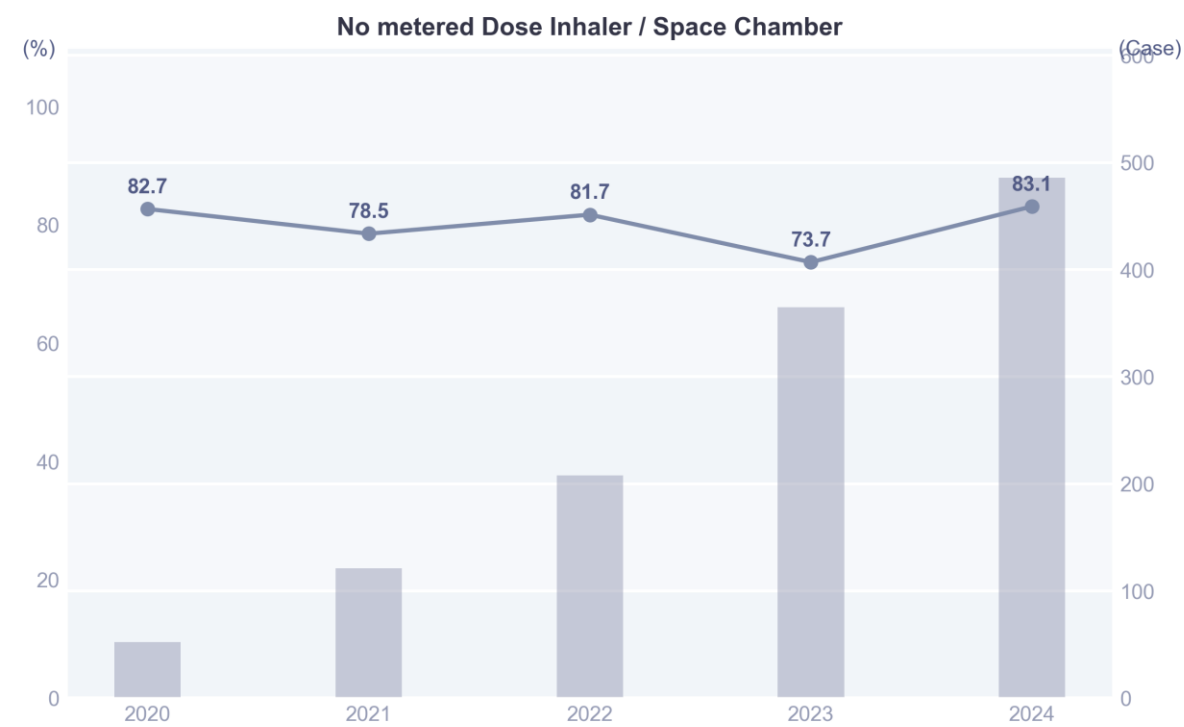
**NO MONTELUKAST:** No Montelukast is given for patient during the hospital admission

### Results



NUH Outcome Book (Quality of Care by Conditions and Procedures)  
- Bronchiolitis (Child, < 24 months) -









### *Interpretation*

Reduction of unnecessary test in Bronchiolitis had been fluctuating possibly due to the variability within the cohort (e.g. miscoding of hyperactive airway disease / pneumonia into Bronchiolitis).

## No Emergency Readmission within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted via emergency to the hospital due to any cause within 30 days from the initial discharge.

### Results



### Interpretation

Percentage of patient readmitted urgently within 30 days of discharge is stable at around 5%.

## Upper Respiratory Tract Infection (Child)

### Number of Patients with URTI (Child)

#### Definitions

An **UPPER RESPIRATORY TRACT INFECTION (URTI) IN CHILDREN** is a common infection affecting the nose, throat, and airways, often caused by viruses.

#### PATIENTS WITH URTI (CHILD):

Collected by: Primary Diagnosis – J060, J068 or J069

Dept. NSPMPM Paediatric only

Accommodation Category  $\neq$  ICU

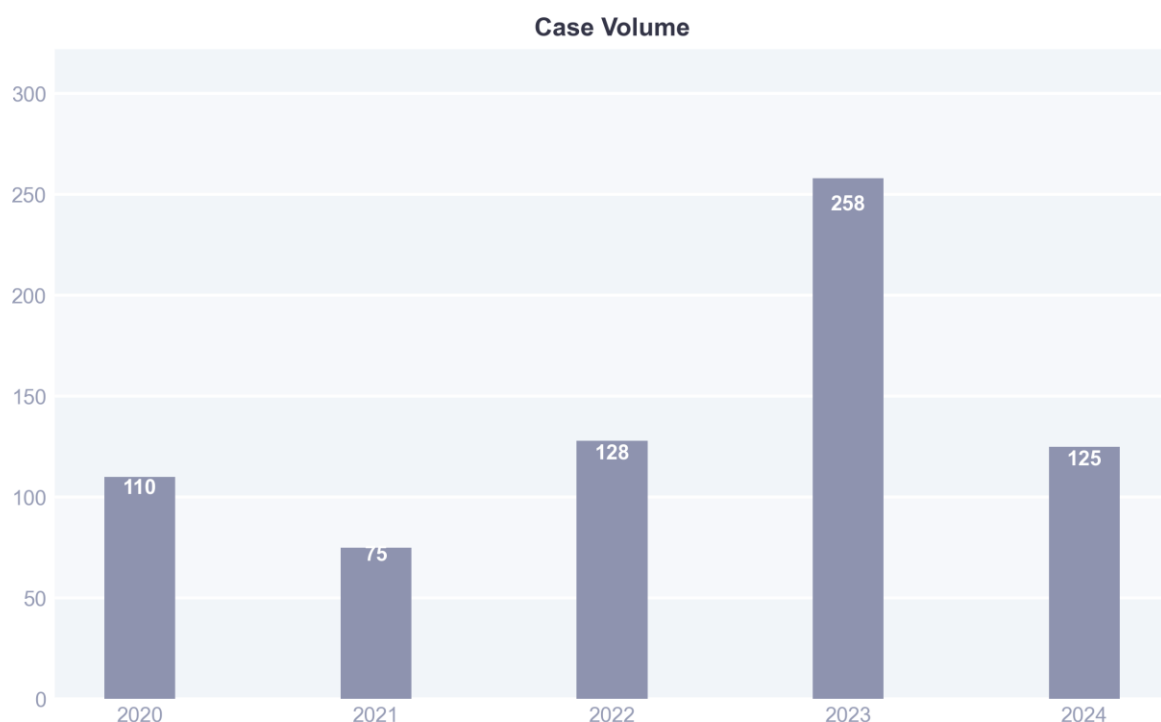
Patient Age on Admission (Months)  $\geq$  3 months

Exclude Patients admitted to Ward 45, Ward 46 and Ward 46A

Exclude Patients discharged from Ward 45 and Ward 46

For report purpose: Exclude Patient with B972 Diagnosis

#### Results



#### Interpretation

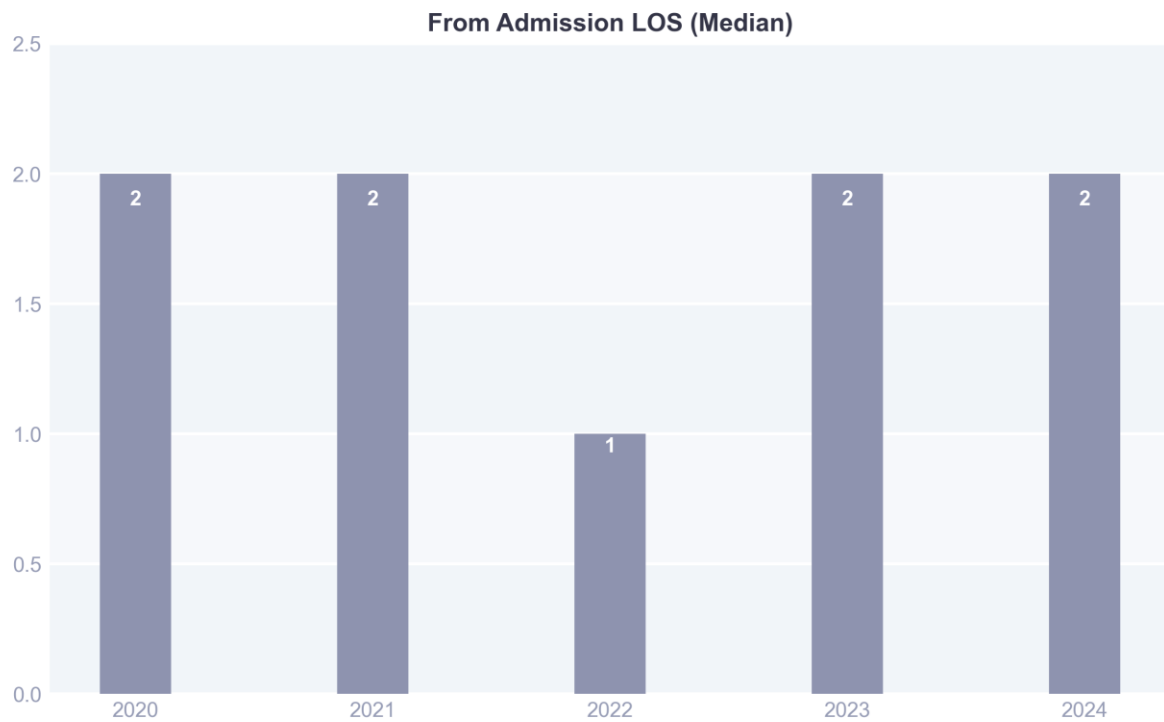
URTI case load is usually around 100 patients per year except in 2023 where there is a 200% increase.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

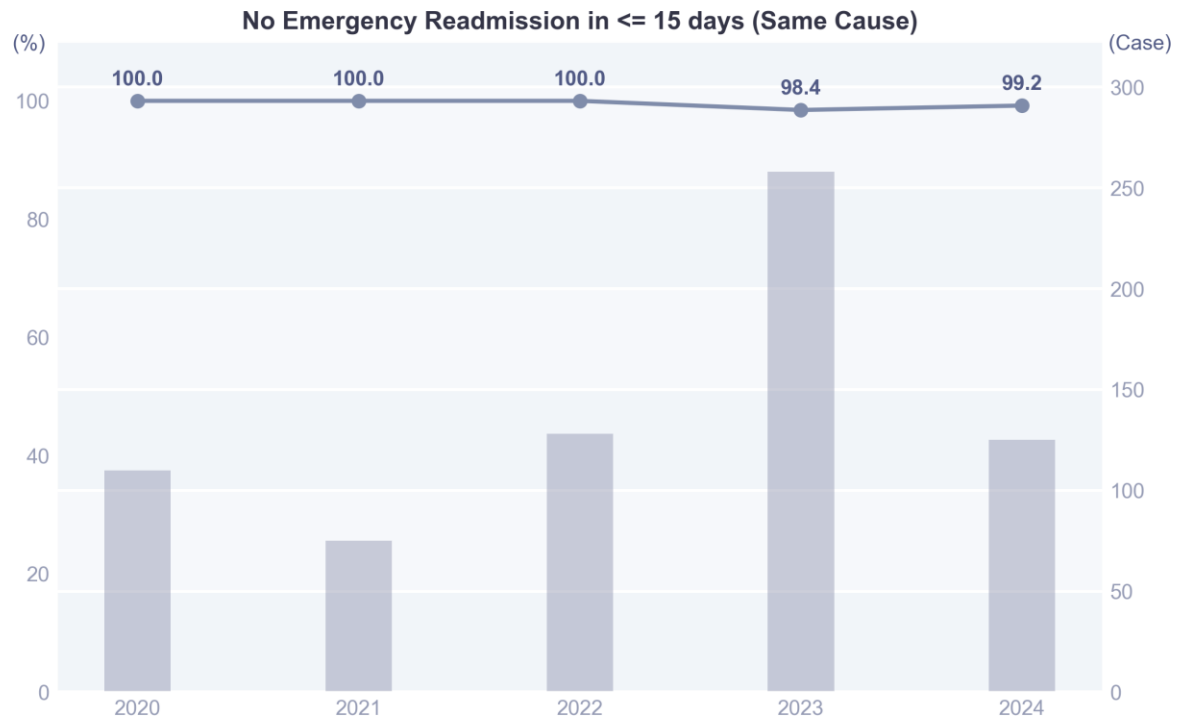
Most of the URTI admissions are for observation of fever trend, feeding, and supportive care, hence, there is short LOS with median around 2 days.

## No Emergency Readmission within 15 Days (Same Cause)

### Definitions

Patients should not be readmitted via emergency to the hospital due to the same cause within 15 days from the initial discharge.

### Results



### Interpretation

Performance of this indicator are constant at ~100% throughout the whole 5 years of data as most URTI cases are self-limiting/viral.

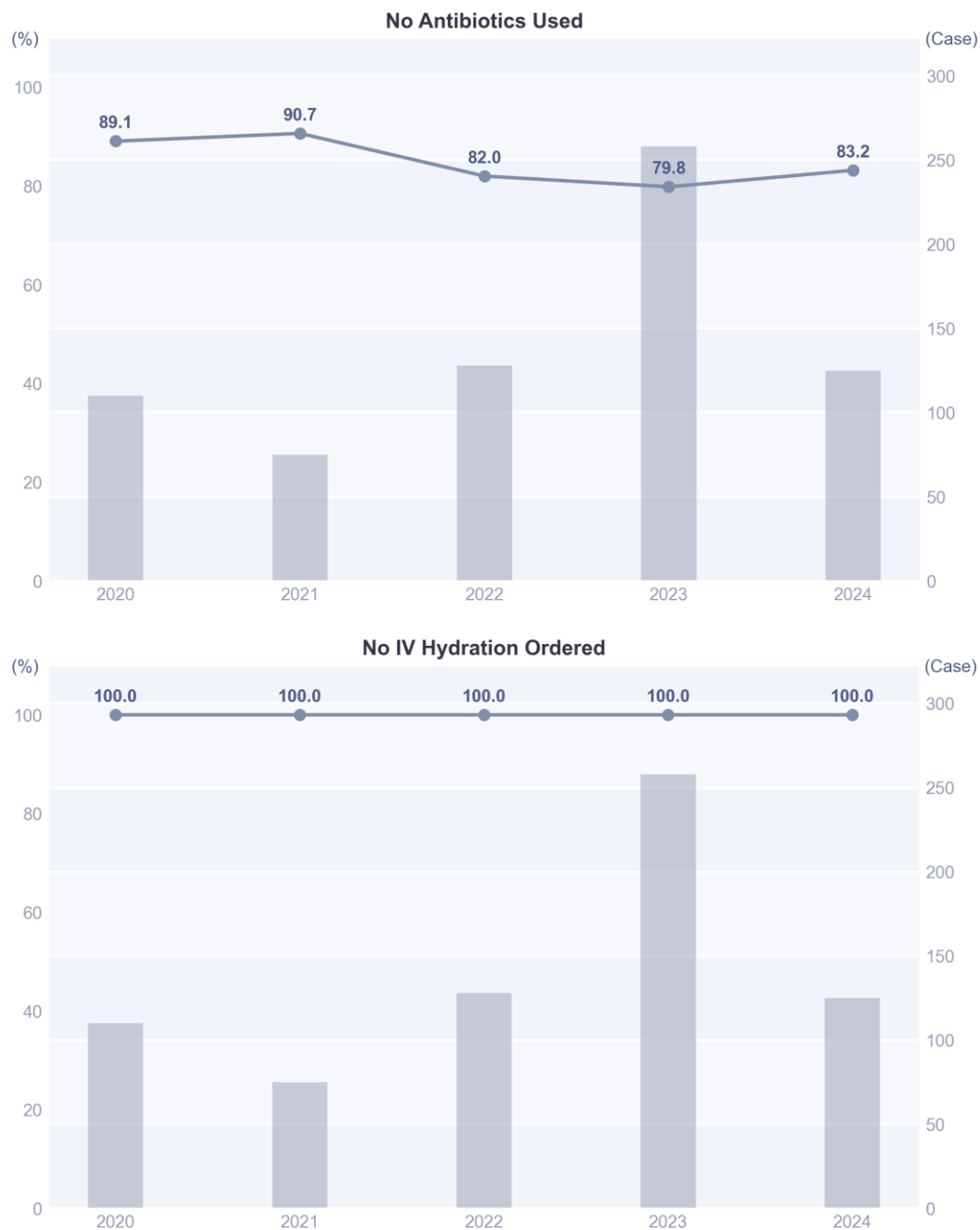
## Appropriateness of Care

### Definitions

**NO ANTIBIOTIC USED:** No Antibiotic is given for patient during the hospital admission

**NO IV HYDRATION ORDERED:** No IV Hydration is given for patient during the hospital admission

### Results



### Interpretation

In the case of self-limiting/viral, antibiotics is deemed as unnecessary treatment. IV Hydration is not normally given to URTI patient unless they are also diagnosed with dehydration.

## Asthma (Child)

### Number of Patients with Asthma (Child)

#### Definitions

**ASTHMA IN CHILDREN** is a chronic lung condition where the airways become inflamed and narrowed, making it difficult to breathe.

#### PATIENTS WITH ASTHMA (CHILD):

Collected by 1) J45\*, J98\* and R062

2) 3 - 18 years old

3) Inpatient only

#### Results



#### Interpretation

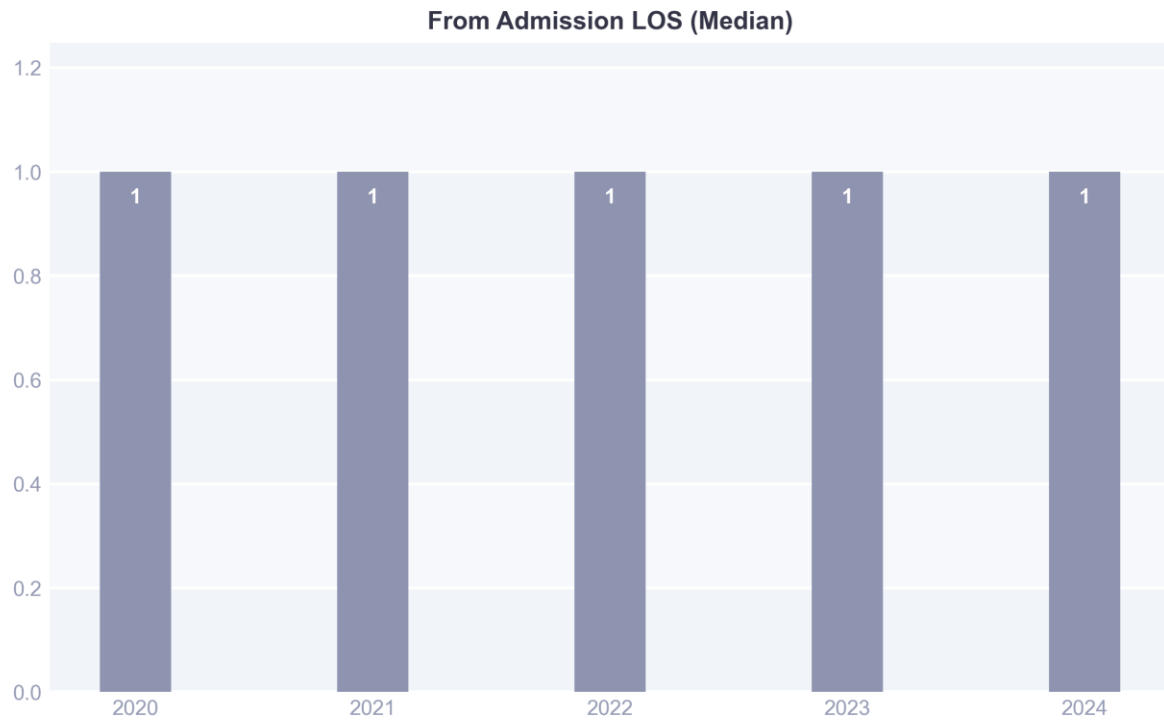
Asthma is one of the common chronic problems in Singapore and the case load of paediatric asthma had been increasing over the year.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median length of stay for Asthma is 1 day



## Appropriateness of Care

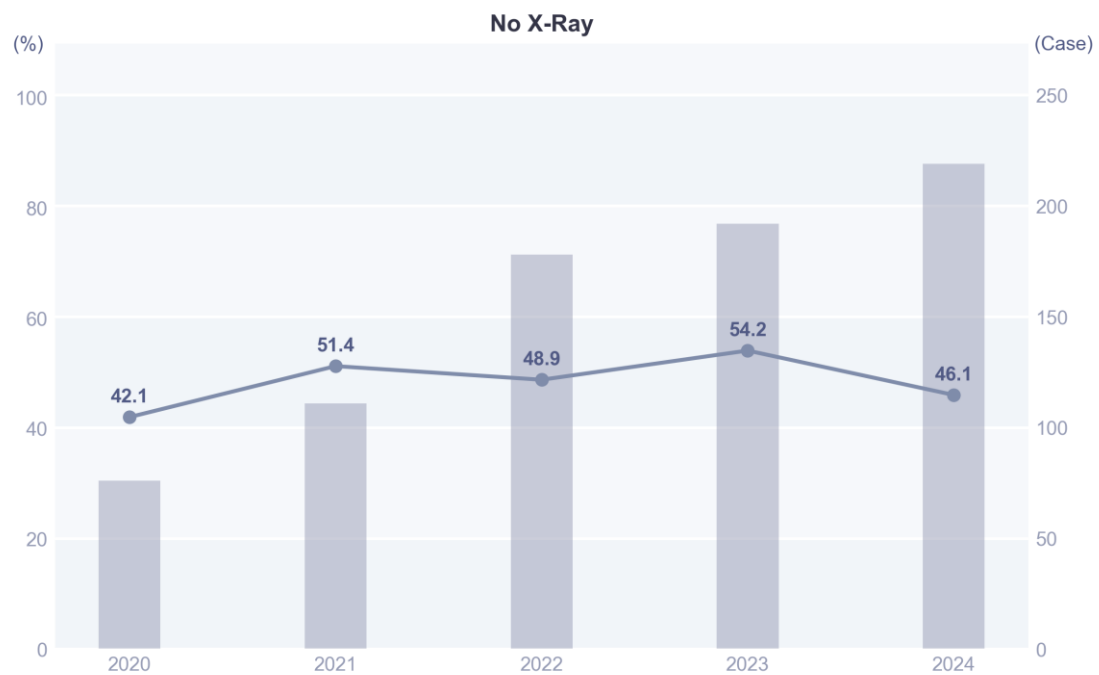
### Definition

**No X-RAY:** No X-Ray is done for patient during the hospital admission

**No MONTELUKAST:** No Montelukast is given for patient during the hospital admission

**No VIRAL SWAB:** No Viral Swab is done for patient during the hospital admission

### Results





### *Interpretation*

Chest radiograph is present in half of the asthma patient which is due to the heterogeneity of the casemix (e.g. first presentation of wheeze). Montelukast is only given to small fraction of patients (~3%) and had been maintained for 5 years.

Respiratory viral studies are not routine as part of the management of asthma exacerbations. However, certain situations may require viral testing to aid cohorting of patients in the shared ward facility. In 2020, viral swab was given to ~40% of the patient in 2020 and since then, percentage of patient given viral swab had been decreasing reaching to only 7% in 2024.

## Tonsillectomy (Child)

### NUH VDO Definition and Quality Indicators

| Cohort             |                                                                                                           |                                                                                                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cohort Definition  | (A) By MOH TOSP Code (Single only):<br>SM705T & LM705T<br>(B) Exclusion criteria:<br>Aged $\geq 18$ years |                                                                                                                                                                                                 |
| Quality Indicators |                                                                                                           |                                                                                                                                                                                                 |
| 1                  | No Emergency Readmission in $\leq 30$ days (all cause)                                                    | No emergency readmission due to any cause within 30 days of initial discharge                                                                                                                   |
| 2                  | No Unplanned return to OT in $\leq 30$ days                                                               | Patients should not be readmitted to hospital due to all cause $\leq 30$ days of initial discharge                                                                                              |
| 3                  | No LOS $> 1$ Day                                                                                          | No patients to stay $> 1$ day                                                                                                                                                                   |
| 4                  | No 30-day Blood Transfusion Rate                                                                          | No blood transfusion within the same episode and/ or 30 days after discharge                                                                                                                    |
| 5                  | No Inpatient Mortality Rate                                                                               | No discharged death                                                                                                                                                                             |
| 6                  | No Post-Op Complication in $\leq 30$ Days of Discharge                                                    | No post-op complications within the same episode and/or within 30 days of initial discharge                                                                                                     |
| 7                  | Overall Patient Experience Score via e-PES $\geq 8$                                                       | To assess the overall patient experience score based on the survey feedback provided / submitted by patient or next of kin. Patient experience score surgery results should be between 8 to 10. |

(Note: VDO indicators for reference only, the table will be removed from the publication later)

## Number of Patients with Tonsillectomy (Child)

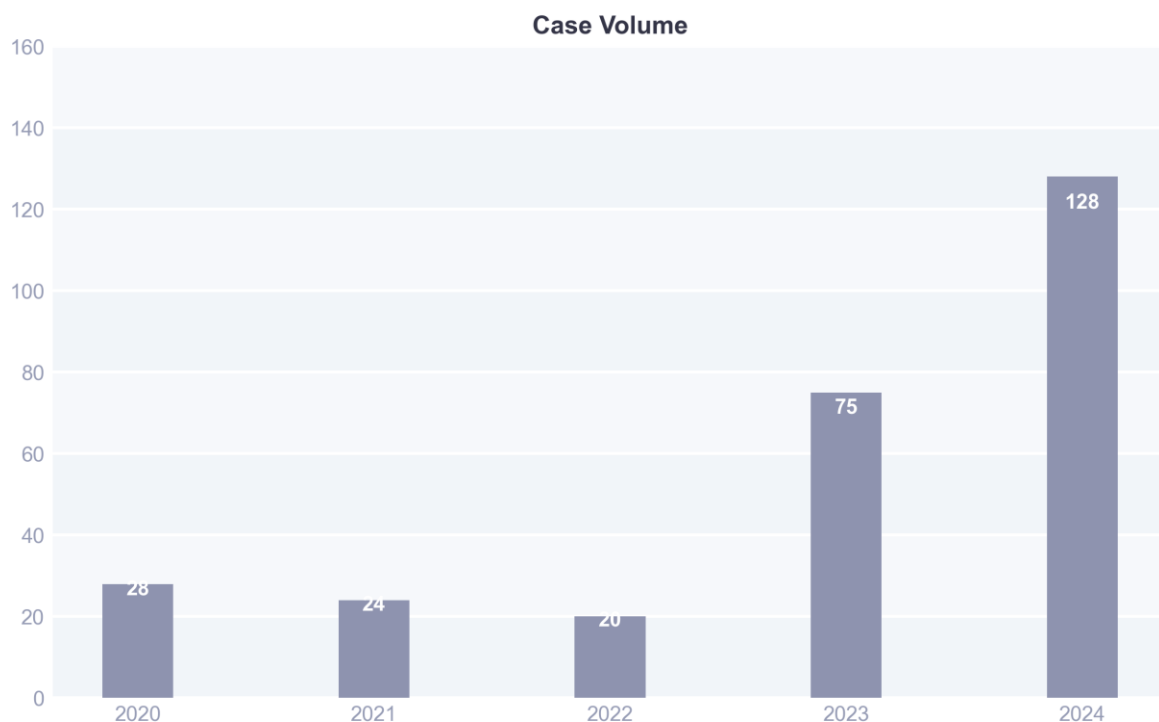
### Definitions

#### Patients with Tonsillectomy (Paeds):

Collected (A) By MOH TOSP Code (Single only): SM705T & LM705T

(B) Exclusion criteria: Aged  $\geq$  18 years

### Results



### Interpretation

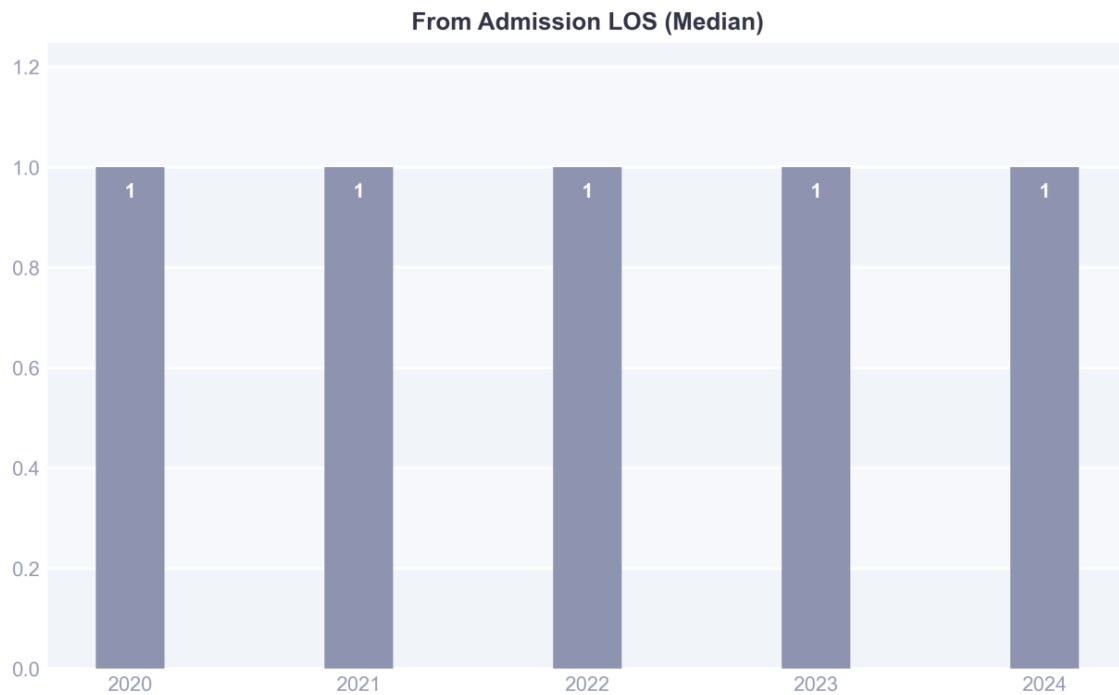
From 2020 (28 cases) to 2022 (20 cases), there is a noticeable decline in case volume. In 2023, there is a dramatic increase to 75 cases, suggesting a sudden rise in case volume and the year 2024 shows the highest case volume at 128 cases.

## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation

Median Length of Stay for Tonsillectomy (Child) cases have maintained at 1 day for the last five years.

## No LOS > 1 Day

### Definitions

No patients to stay > 1 day

### Results



### Interpretation

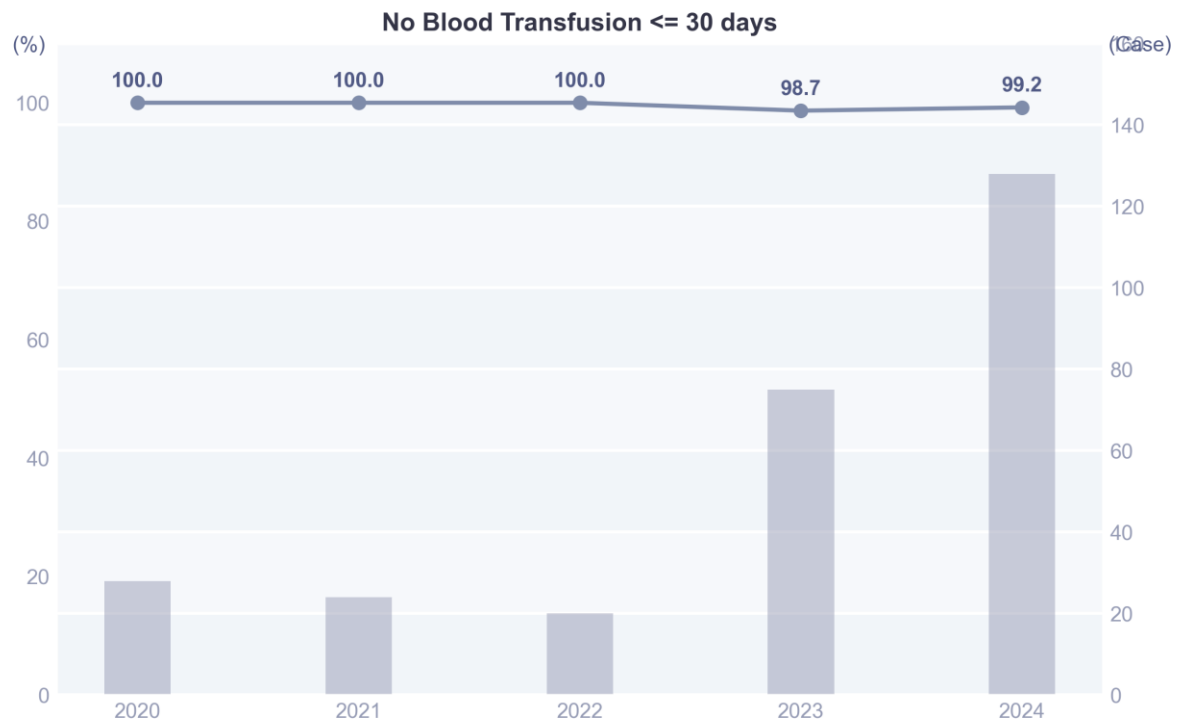
The percentage metric for the years 2020, 2021, and 2022 remains at 100%, indicating optimal performance or outcomes during those years. In 2023, the percentage drops to 97.3%, which indicates a slight decline in performance compared to the previous years. However, it is still a strong performance. The percentage returns to 97.7% in 2024.

## No Blood Transfusion

### Definitions

Patients should not receive blood transfusion during admission.

### Results



### Interpretation

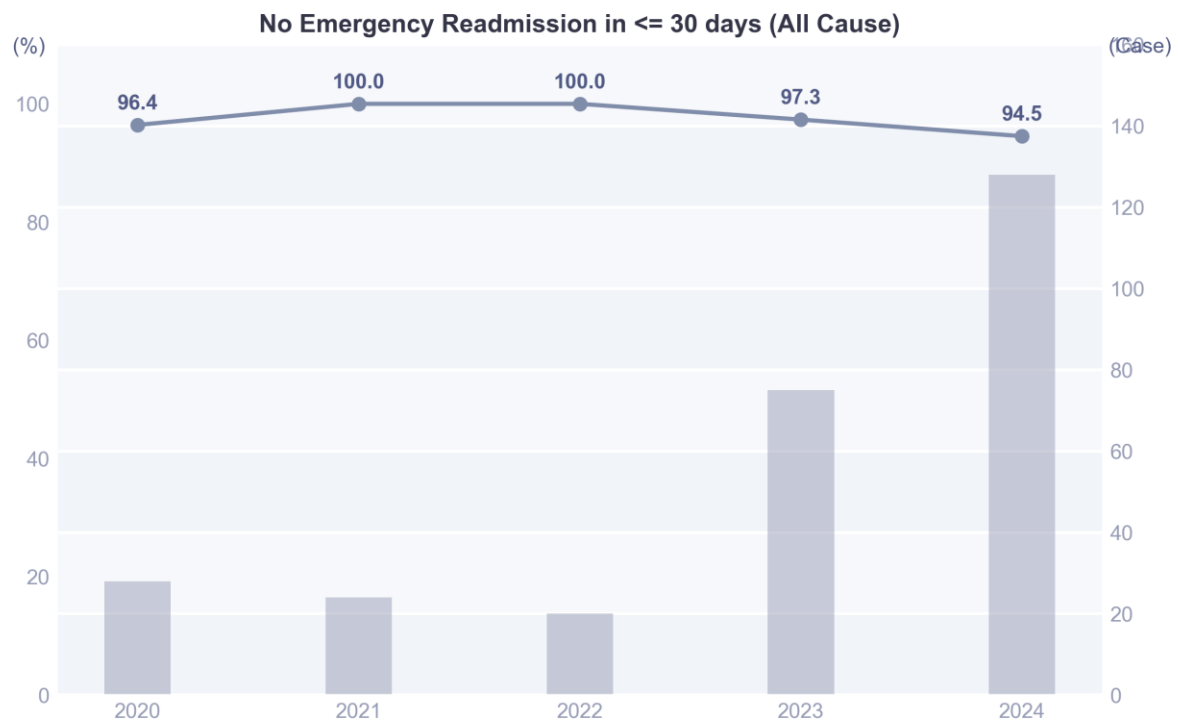
The percentage metric for the years 2020, 2021, and 2022 remains at 100%, indicating optimal performance or outcomes during those years. In 2023, the percentage drops to 98.7%, which indicates a slight decline in performance compared to the previous years. However, it is still a strong performance. The percentage returns to 99.2% in 2024.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation

The percentage metric for the years 2021 and 2022 remains at 100%, indicating optimal performance or outcomes during those years. In 2020, the percentage was slightly lower at 96.4%, indicating some challenges. In 2023, the percentage drops to 97.3%, which indicates a slight decline in performance compared to previous years. However, it is still a strong performance. The percentage further drops to 94.5% in 2024.

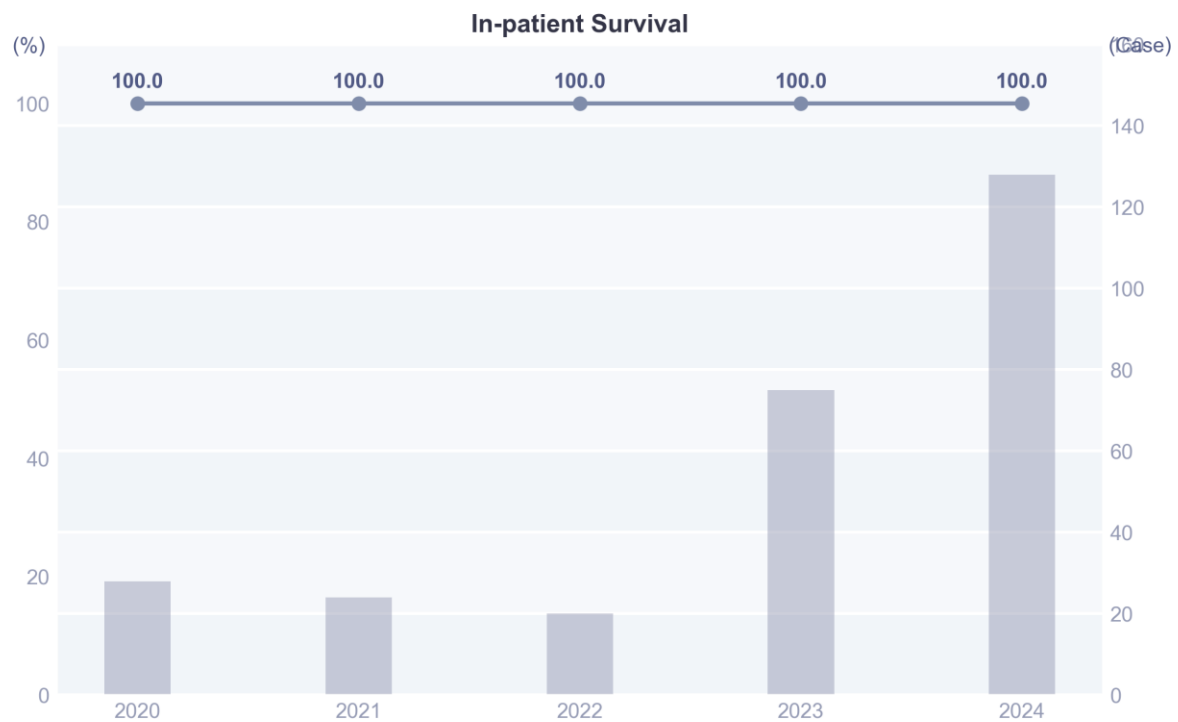


## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation

The stability of the percentage at 100% implies that the outcome has been optimal throughout the years.

## No Complication within admission or 30 days from the initial discharge

### Definitions

**Complication** is defined as any record of secondary diagnosis during the current admission that does not present on admission, and primary or secondary diagnosis of subsequent readmissions within 30 days from the initial discharge.

Patients should not have complications within the hospital admission or within 30 days of initial discharge.

### Results



### Interpretation

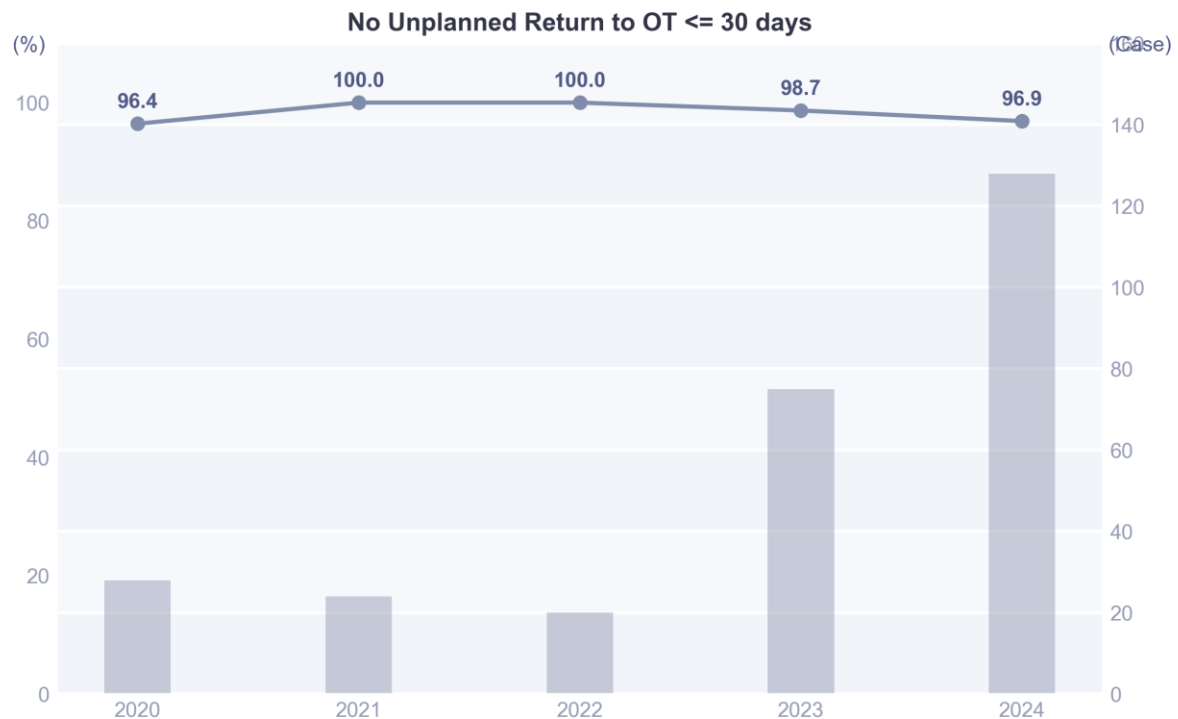
The percentage metric for the years 2021 and 2022 remains at 100%, indicating optimal performance or outcomes during those years. In 2020, the percentage was slightly lower at 96.4%, indicating some challenges. In 2023, the percentage drops to 97.3%, which indicates a slight decline in performance compared to previous years. However, it is still a strong performance. The percentage further drops to 93.8% in 2024.

## No Return to Operation Theatre (OT) within 30 Days Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 30 days from the initial discharge due to any cause

### Results



### Interpretation

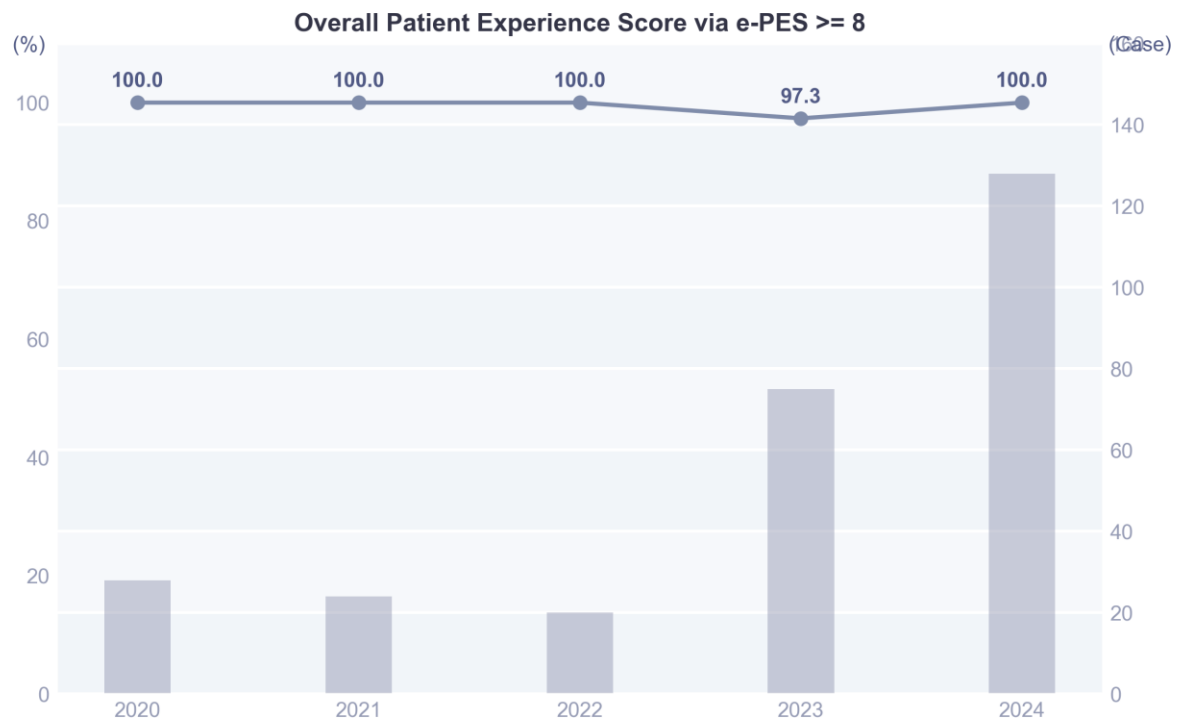
The percentage metric shows a stable performance in 2021 and 2022 at 100%, indicating optimal conditions or outcomes during those years. However, in 2020, the percentage was slightly lower at 96.4%, suggesting some challenges. In 2023, the percentage drops to 98.7%, which is still strong but indicates a slight decline in performance compared to previous years. The percentage for 2024 is 96.9%, which suggests a further decline, although it remains above 90%.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

The percentage metric for the years 2020, 2021, and 2022 remains at 100%, indicating optimal performance or outcomes during those years. In 2023, the percentage drops to 97.3%, which indicates a slight decline in performance compared to the previous years. However, it is still a strong performance. The percentage returns to 100% in 2024.

## Circumcision (Child)

### Number of Patients with Circumcision (Child)

#### Definitions

**CIRCUMCISION (CHILD):** Circumcision is an operation to remove excess foreskin on the penis. It is performed if there is phimosis (tight foreskin opening), recurrent foreskin infections and for religious reasons. After circumcision, the glans penis (head of the penis) will remain exposed permanently (Source: HealthHub SG).

**PATIENTS WITH CIRCUMCISION (CHILD):** Collected by TOSP SH808P, LH808P

#### Results



#### Interpretation

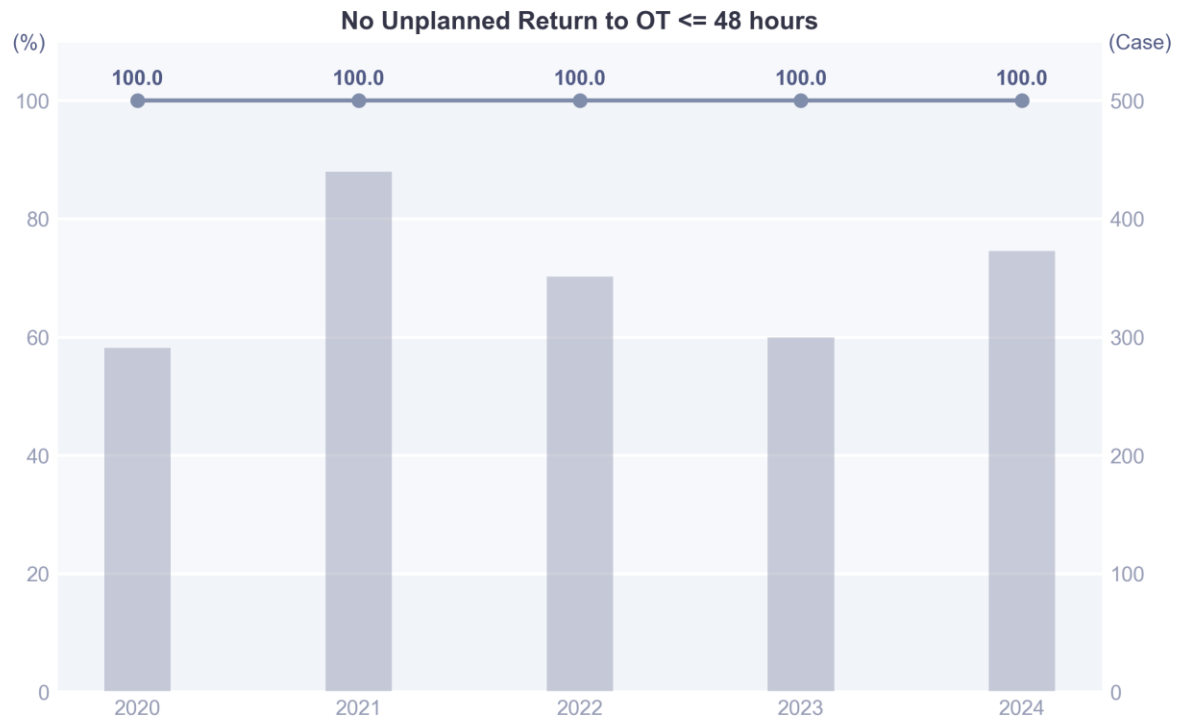
The number of cases ranges from around 290 to 440 each year.

## No Return to Operation Theatre (OT) Within 48 Hours Due to Any Cause

### Definitions

Patients should not return to the operation theatre (OT) during the same episode of admission and within 48 hours from the initial discharge due to any cause

### Results



### Interpretation

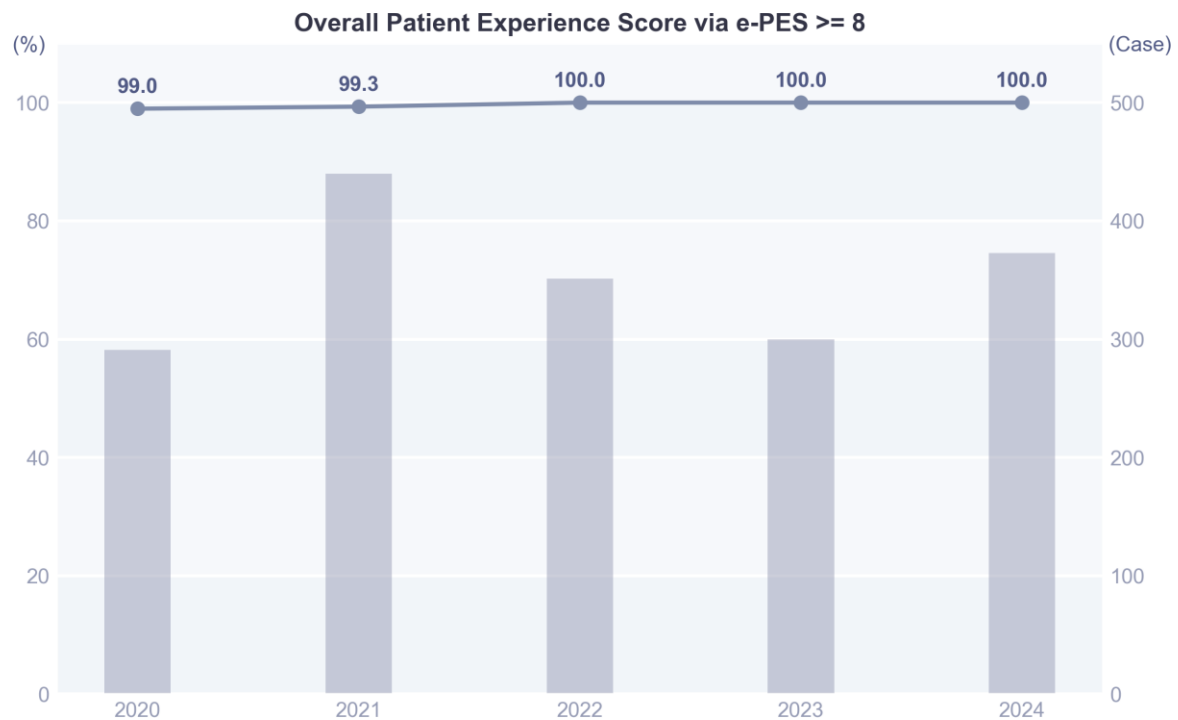
There was no unplanned return to OT within 48 hours cases found in past five years.

## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.

### Results



### Interpretation

Overall patient satisfaction with inpatient ward services was 100% in past three years.

## Very Low Birth Weight Babies (NUH VDO)

### Number of Patients with Very Low Birth Weight Babies

#### Definitions

**VERY LOW BIRTH WEIGHT BABIES:** Neonatal patients with <1500 g birth weight

**PATIENTS WITH VERY LOW BIRTH WEIGHT (VLBW):** Collected from Department Registry

#### Results



#### Interpretation:

The number of VLBW babies ranges from 45 to 65 over the years.



## From Admission Length of Stay

### Definitions

The total number of calendar days from the date of hospital admission to the date of discharge. This measure reflects the overall duration of inpatient care.

### Results



### Interpretation:

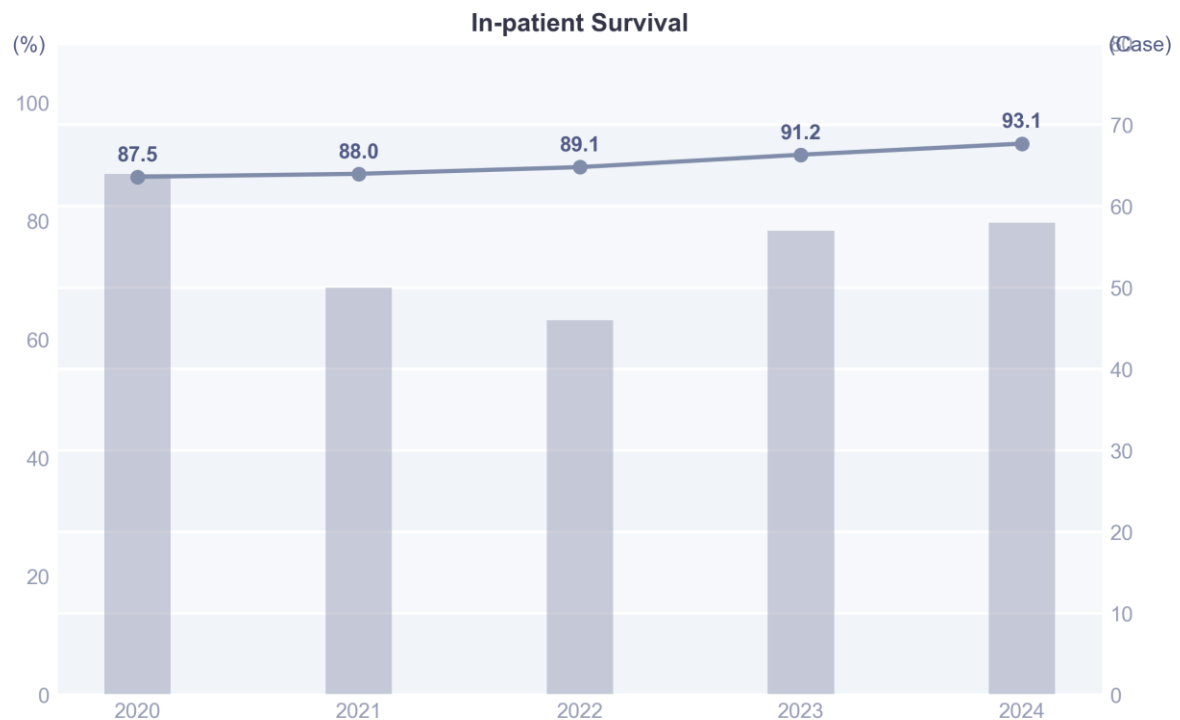
The median length of stay has increased from 2020. This is likely related to increased survival of extremely preterm neonates (those below 28 weeks of gestational age).

## In-Hospital Survival

### Definitions

The proportion of patients who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation:

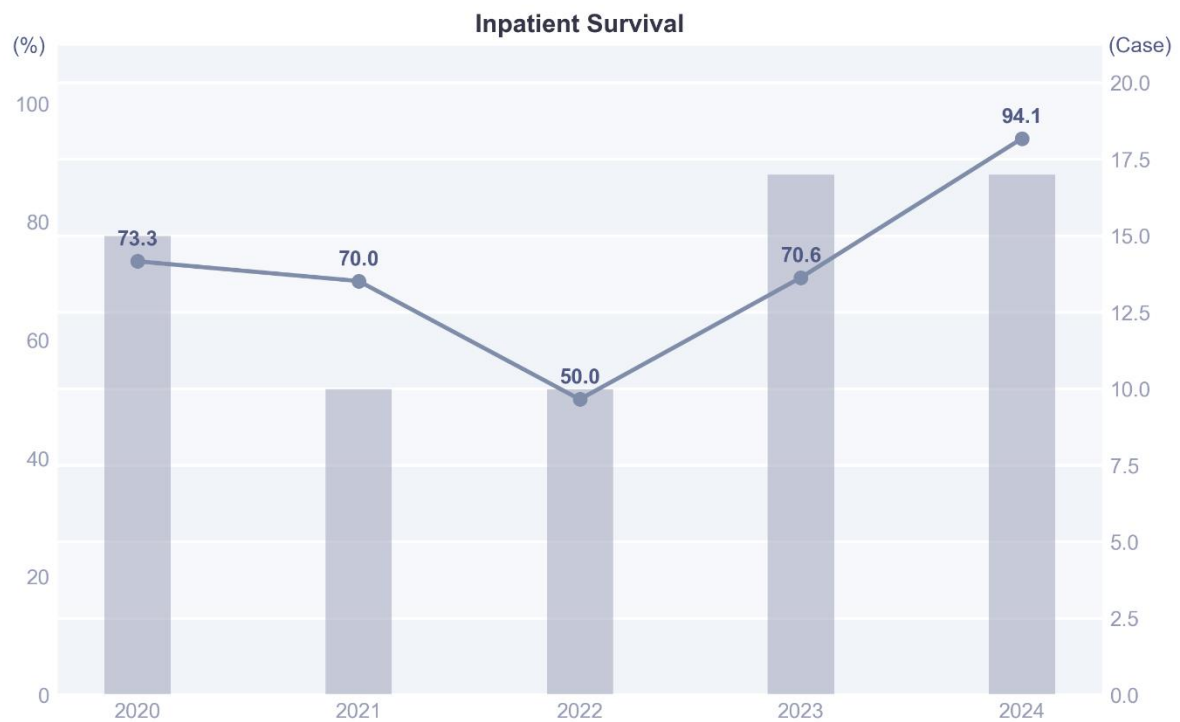
In hospital survival rate has increased over the years.

## In-Hospital Survival for Newborns with Gestational Age 24 – 26 Weeks

### Definitions

The proportion of patients born 24-26 weeks of gestational age who survive during the hospital stay, regardless of cause. This includes survival from the primary condition, associated comorbidities, or other complications and events occurring during admission.

### Results



### Interpretation:

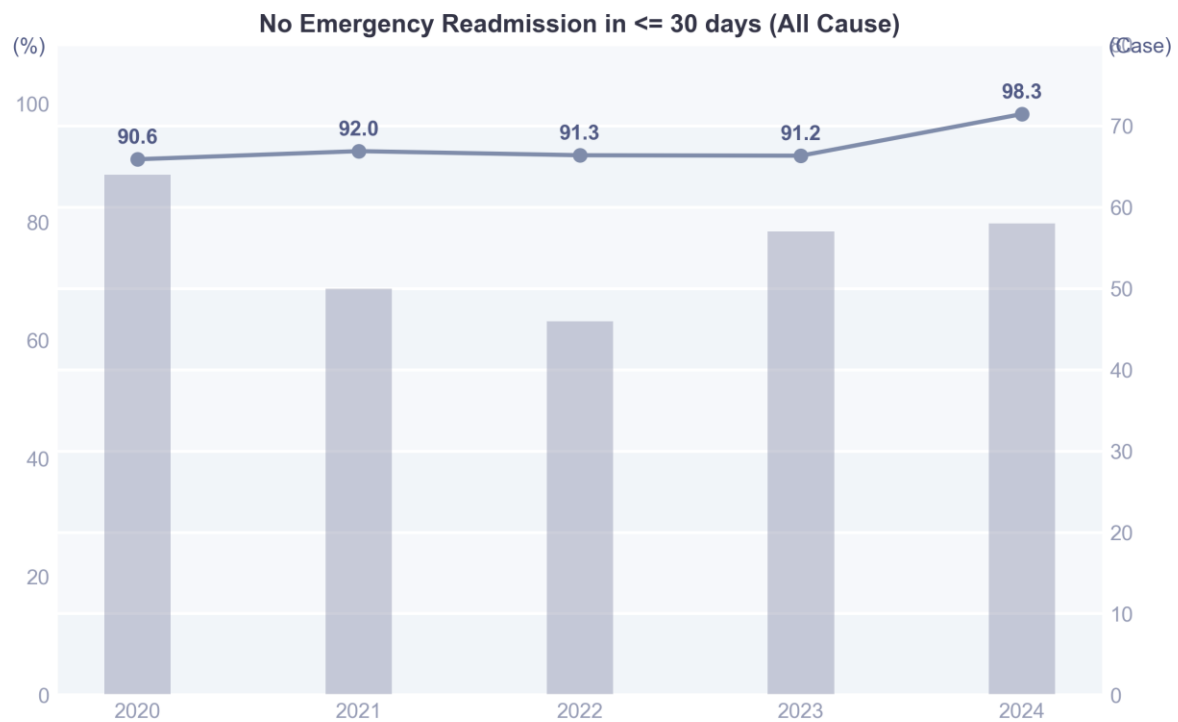
The rate of in-hospital survival for babies born 24-26 weeks of gestational age has shown a significant improvement in 2024.

## No Emergency Readmission Within 30 Days (Any Cause)

### Definitions

Patients should not be readmitted to the hospital via the emergency department for any reason within 30 days following their initial discharge. This measure reflects the effectiveness of inpatient care, discharge planning, and post-discharge follow-up.

### Results



### Interpretation:

Rate of cases with no emergency readmission within 30 days of discharge has also improved since 2020.

## Complications

### Definitions

Survivors without severe Intraventricular haemorrhage (IVH; Grade 3 and 4) or Periventricular Leucomalacia (PVL)

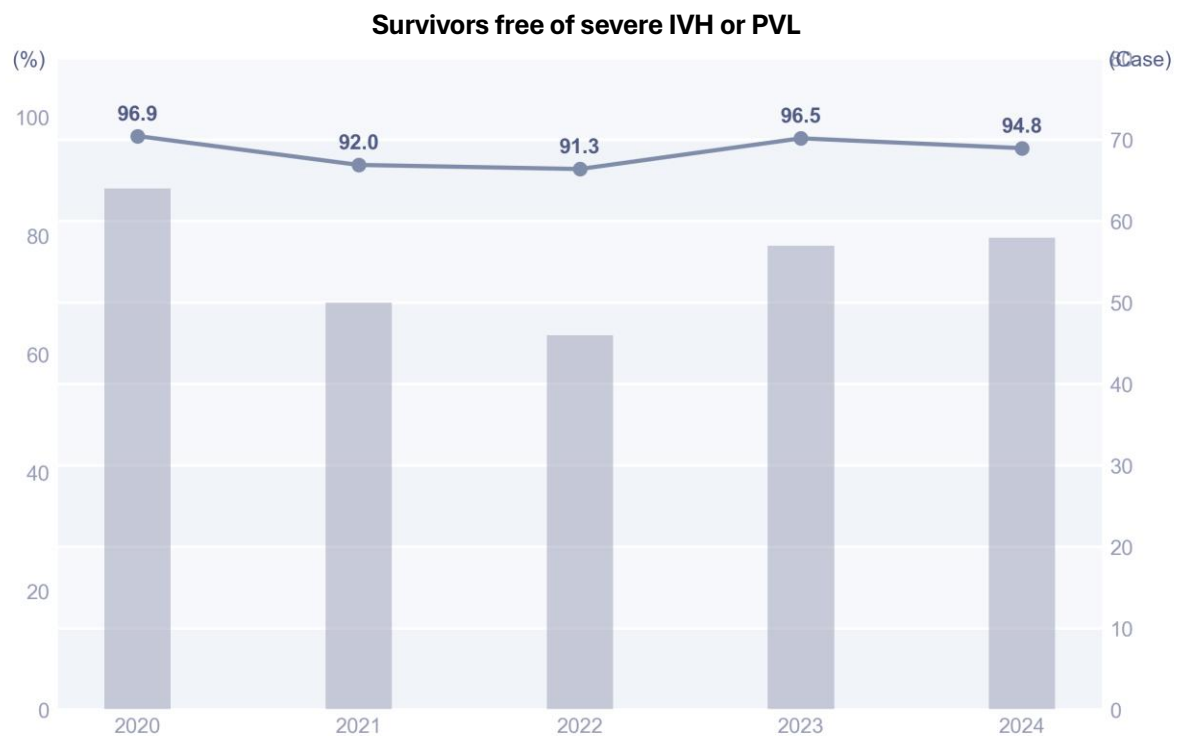
Survivors without Late onset sepsis (LOS)

Survivors without chronic lung disease of prematurity (CLD)

Survivors without severe retinopathy of prematurity (Stage 3 and above) (ROP)

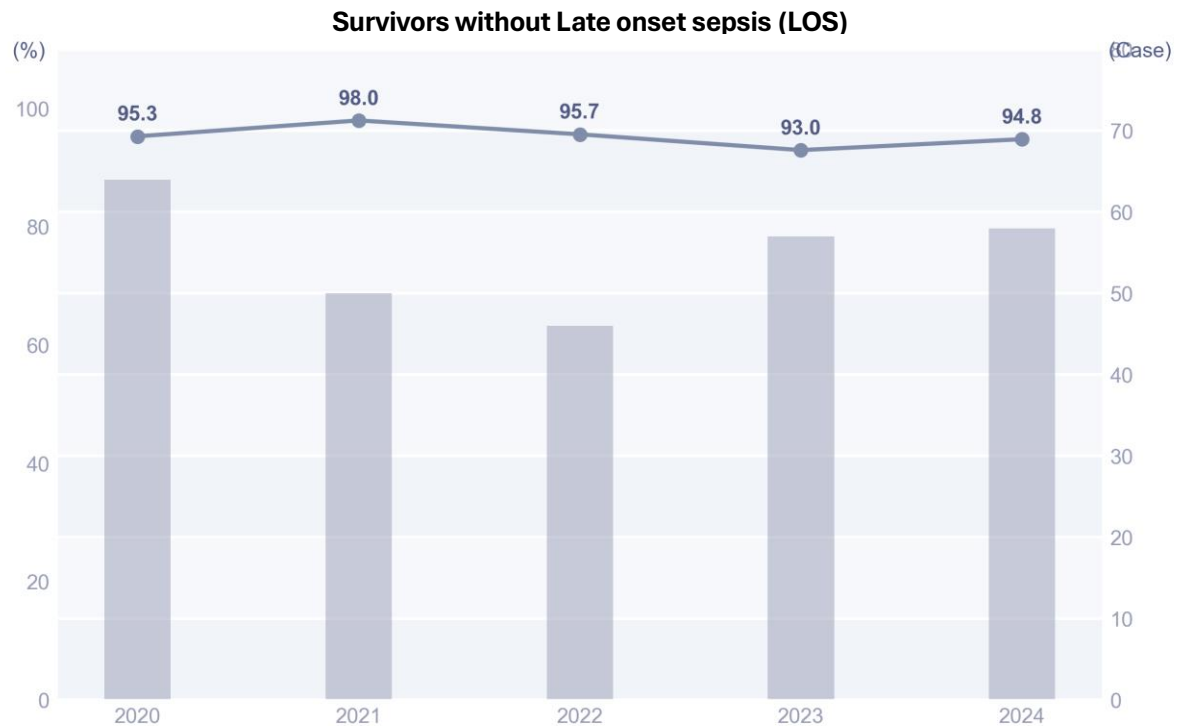
Survivors without necrotizing enterocolitis or spontaneous intestinal perforation

### Results



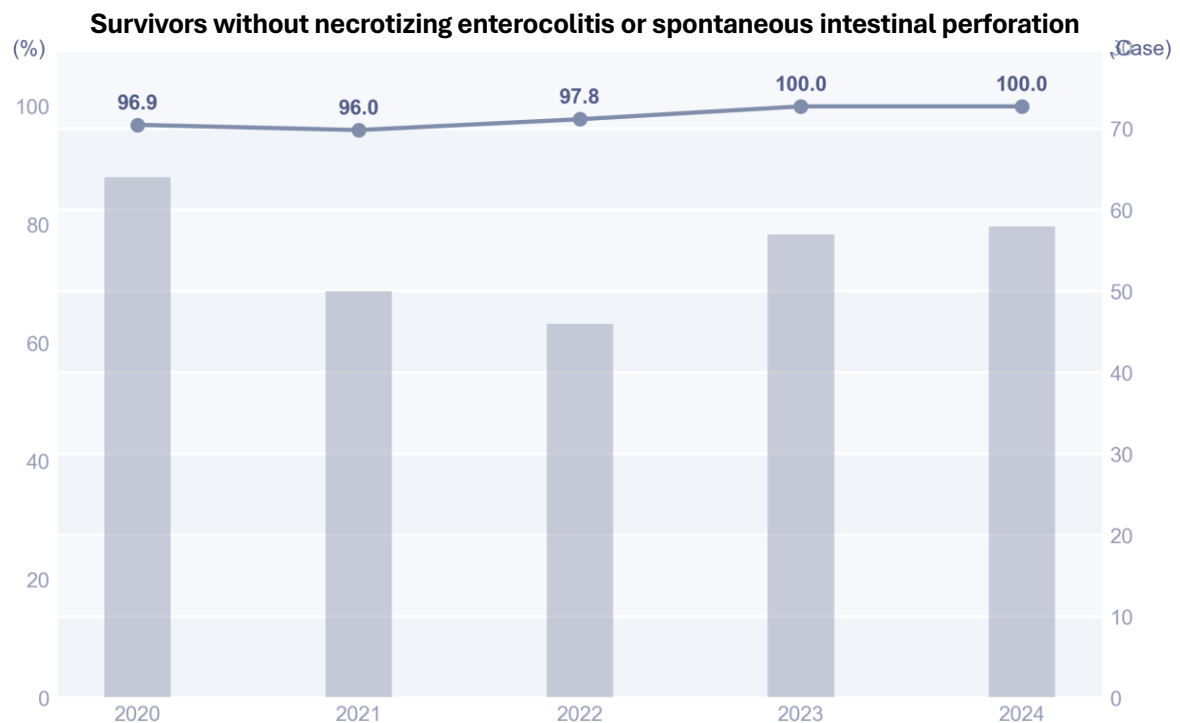
### Interpretation:

The rate of survivors without severe IVH or PVL has maintained at above 90%.



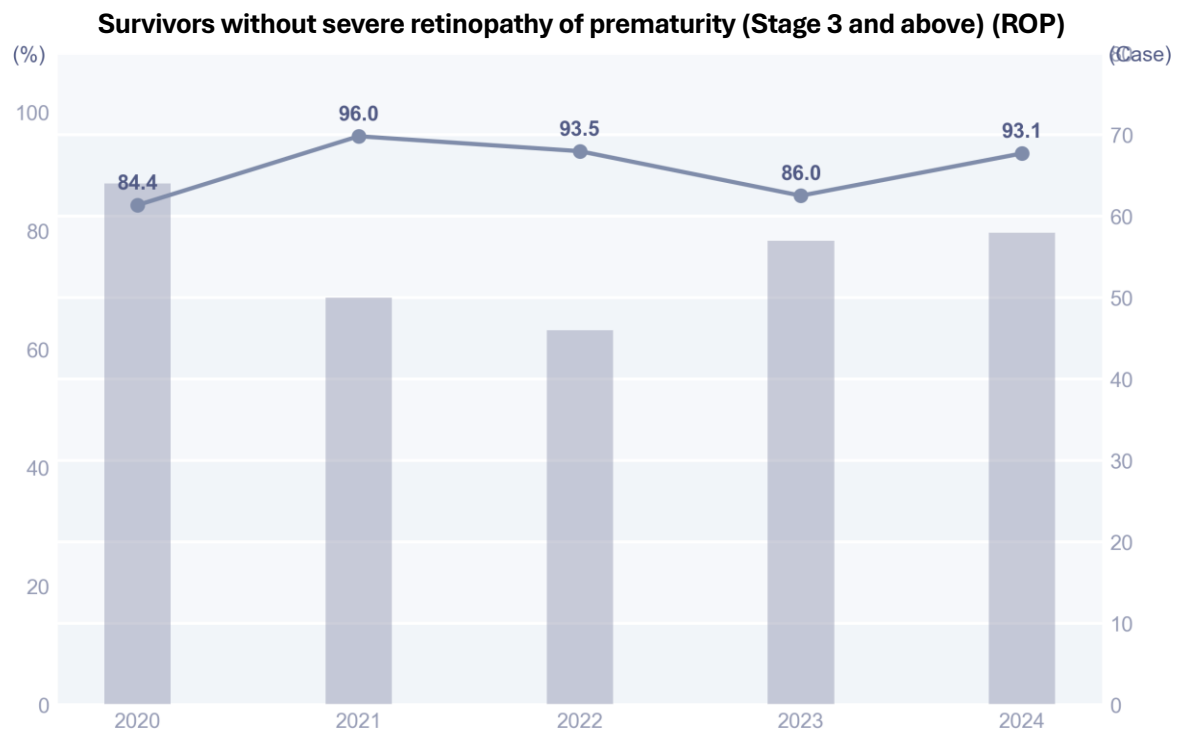
**Interpretation:**

The rate of survivors without late onset Sepsis has maintained at above 90%.



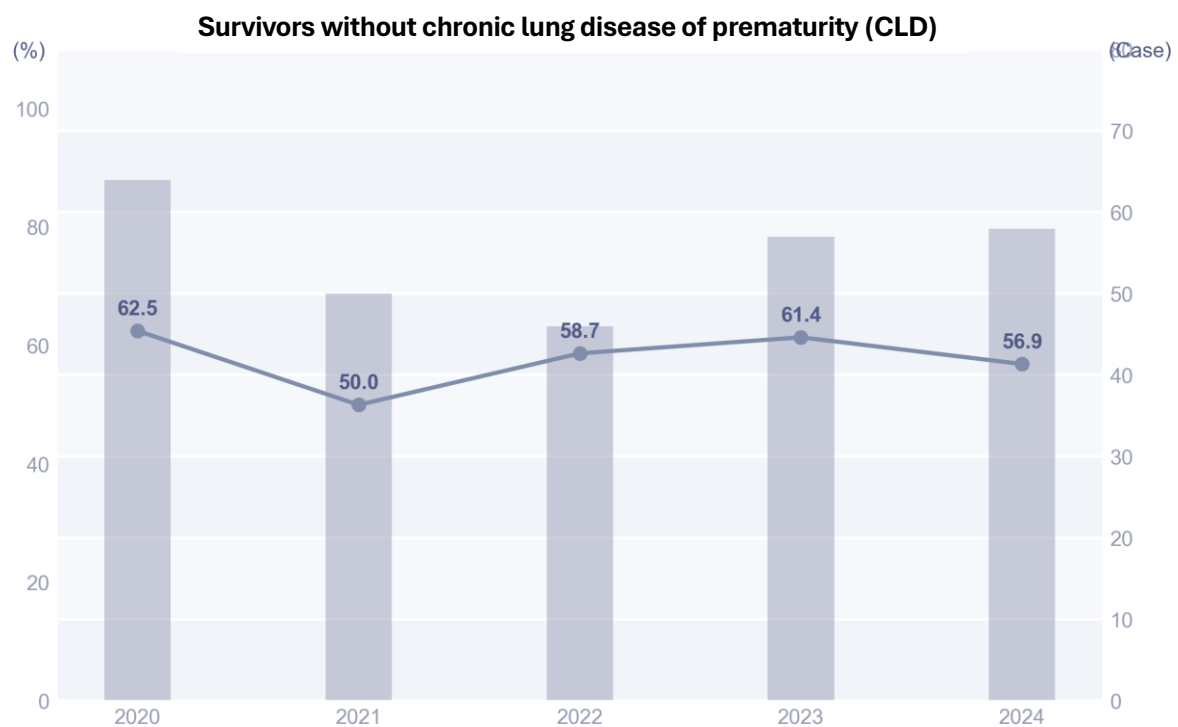
**Interpretation:**

The rate of survivors without NEC has improved over the years and maintained above 96%. There was no NEC in last 2 years.



**Interpretation:**

The rate of survivors without Severe ROP has maintained at above 80%.



*Interpretation:* CLD rate has remained stable despite increased survival of extremely premature babies

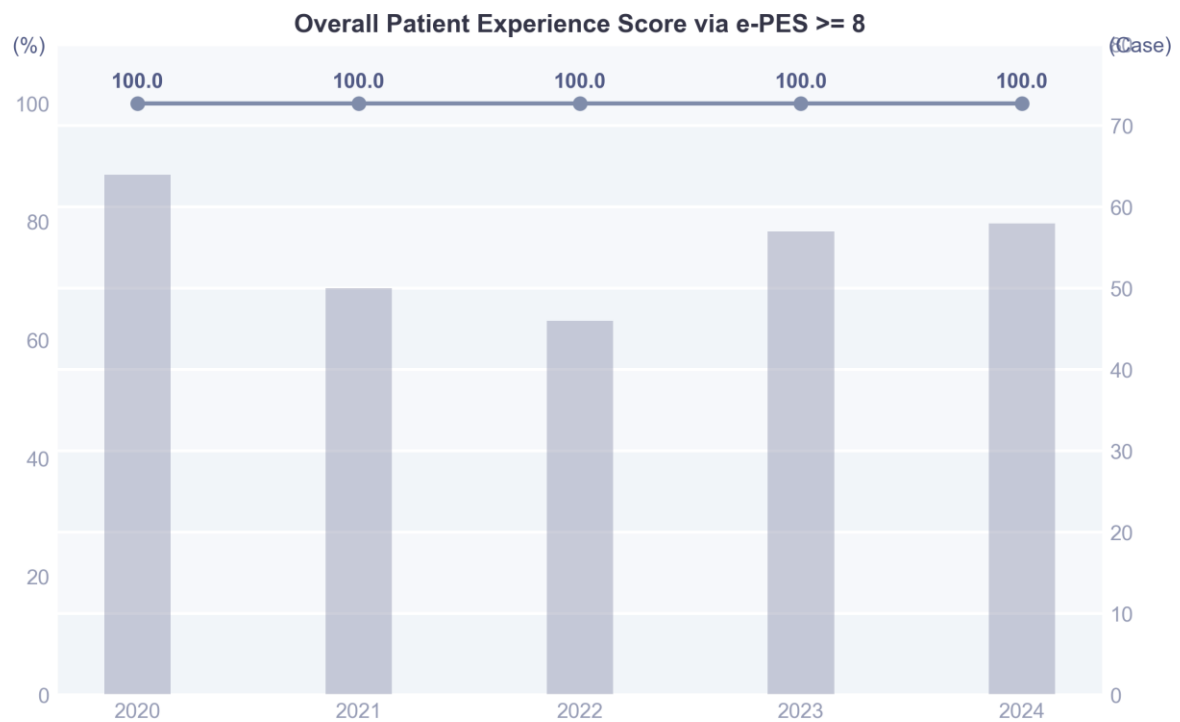
## Patient Experience Score (PES)

### Definitions

**PATIENT EXPERIENCE SCORE (PES)** evaluates patients' overall satisfaction with inpatient ward services, collected via SMS survey. Patients respond to the question: "Based on your recent visit to the ward, how would you rate your experience?" using a scale from 0 (worst possible) to 10 (best possible). A PES of  $\geq 8$  indicates satisfactory patient experience.



## Results



### Interpretation:

Parents of VLBW babies were consistently satisfied with neonatal intensive care over the past 5 years.

## Appendix

### STROKE: SNUH DEFINITION AND INDICATORS

Number of Stroke Admission  
Brain Imaging within 1-Hour of Admission  
Number of IV Thrombolysis  
Proportion of Door to Needle Time within 1 Hour  
Median Door to Needle Time  
Number of Endovascular Treatment (EVT)  
Proportion of Door to Puncture Time Greater than 100 Minute.  
Wait Time from Admission to First Pass Time in Endovascular Treatment  
Proportion of Endovascular Treatment  
Success Rate for Reperfusion in Endovascular Treatment  
Proportion of Wait Time < 120min from Admission to Reperfusion after Endovascular Treatment  
Proportion of END in EVT Patients  
END Reporting Time (Median)  
Inpatient Education  
Average Length of Stay  
Proportion of Patients with mRS≤2 at Month 3 and Year 1  
Proportion of mRS≤2 Patients at Month 3 after Endovascular Treatment  
Incidence of Cardiocerebrovascular Event within 1-Year of Stroke  
Patient Hotline Registration and Number of Consultation

### CAROTID ARTERY STENOSIS

#### Appendix: SNUH Definition and Indicators

Number of Carotid Artery Stenting, Endovascular Neurosurgery Centre  
Incidence of Complications after Carotid Artery Stenting, Endovascular Neurosurgery Centre

### CEREBRAL ANEURYSM

#### Appendix: SNUH Definition and Indicators

Number of Cerebral Aneurysm Coiling  
Average Length of Stay, Coil Embolization for Unruptured Cerebral Aneurysm  
Incidence of Complications after Cerebral Aneurysm Coil Embolization  
Number of Cerebral Aneurysm Surgery  
Number of Clipping Surgery for Uncomplicated, Unruptured Cerebral Aneurysm  
Incidence of Short-term Complications after Uncomplicated Cerebral Aneurysm Surgery  
Incidence of Long-term Complications after Uncomplicated Cerebral Aneurysm Surgery

### CENTRAL NERVOUS SYSTEM (CNS) INFECTIOUS DISEASES

#### Appendix: SNUH Definition and Indicators

Door to Needle Time for Antimicrobial Drug Administration  
Proportion of mRS ≥3 Patients upon Discharge  
Intrahospital Mortality of Patients with CNS Infectious Diseases

### NEUROENDOVASCULAR TREATMENT

#### Appendix: SNUH Definition and Indicators

Number of Neuroendovascular Treatment  
Incidence of Complications after Neuroendovascular Treatment

### TRANSFEMORAL CEREBRAL ANGIOGRAPHY (TFCA)

#### Appendix: SNUH Definition and Indicators

NUH Outcome Book (Quality of Care by Conditions and Procedures)  
- Very Low Birth Weight Babies (NUH VDO) -

Number of TFCA  
Number of TFCA, Day Procedure Center  
Average Length of Stay, TFCA  
Incidence of Complications after TFCA

**NEUROLOGIC EMERGENCY**

**Appendix: SNUH Definition and Indicators**

Length of Stay at ER