german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

صحت کارڈ پلس
SEHAT CARD PLUS

FIRST-YEAR REPORT

on services utilisation under the universal population coverage conferred by the social health protection initiative

SEHAT CARD PLUS

in Khyber Pakhtunkhwa, Pakistan

Date: July 2022

Disclaimer

This publication has been developed and produced with the support of the German Federal Ministry for Economic Cooperation and Development (BMZ) through the Support to Social Protection – Social Health Protection (SP-SHP) project implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The views expressed in this publication do not necessarily represent those of GIZ Pakistan.

Preferred citation

Sheraz Ahmad Khan, Amir Rafiq Khattak, Raheel Shahab Khan. First-year report on services utilisation under the universal population coverage conferred by the social health protection initiative (Sehat Card Plus) in Khyber Pakhtunkhwa, Pakistan. Peshawar: 2022.

CONTENTS

TABLES

FIGURES

PREFACE

Sehat Card Plus (SCP) programme is the flagship social health protection initiative by the Government of Khyber Pakhtunkhwa. The Government of Khyber Pakhtunkhwa extended the coverage of Sehat Card to the entire province population in 2021. This report provides the first comprehensive overview of the utilisation of the services under the programme.

Sehat Card Plus is a health insurance programme providing inpatient secondary and tertiary care coverage. It provides services through a network of public and private hospitals across the province. People of all genders and ages are covered, including pre-existing medical conditions. Given these basic design features, this report reflects on the utilisation stratified by regions, gender, age groups, and type of service providers.

The motto for preparing this report was that good systems are learning systems. Learning is a continuous process of introspection, reflection, and evidence-based decisions. By furnishing the data, this report will enable the programme to identify its strengths and areas for improvement. Through these reflections and iterative processes, the programme might be able to contribute toward making an equitable and responsive health system and enable it to deliver on the promise of universal health coverage.

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

Sehat Card Plus programme is an initiative by the Government of Khyber Pakhtunkhwa, conferring health insurance coverage of up to one million rupees. The programme started with a limited population coverage in 2015 and expanded to cover 100% of the province's population in a few years. It shows the resolve of the Government and the premium it places on access to health care.

The 100% population coverage started early in 2021. To reflect on the accomplishments in the first year of the 100% population coverage, the programme has compiled this report with the assistance of our long-standing partner, i.e., the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. It provides an overview of the number of families who benefitted from the programme and the type of services provided. This report will serve as a baseline for comparison with the following years. The longitudinal analysis would enable the programme to follow its progress and make data-driven policy decisions.

I would like to express my gratitude to the Secretary, Department of Health, Government of Khyber Pakhtunkhwa for his continued support and feedback on the programme. I also commend the efforts of Dr. Shehraz Ahmad Khan for all the analytical work done to compile this report. Lastly, I want to thank the dedicated team of Sehat Card Plus programme, particularly, Dr. Aamir Rafiq Khattak for providing his valuable inputs to finalise the report.

Dr. Muhammad Riaz Tanoli
Chief Executive Officer
Sehat Card Plus programme
Health Department, Khyber Pakhtunkhwa

ACRONYMS
AND ABBREVIATIONS

ALoS	Average Length of Stay
BISP	Benazir Income Support Programme
CNIC	Computerized National Identity Card
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HFO	Health Facilitation Officer
KfW	German Development Bank
NADRA	National Database and Registration Authority
NHS	National Health Services
NSER	National Socio-Economic Registry
OOP	Out-of-Pocket
OPD	Outpatient Department
PKR	Pakistani Rupee
PMT	Proxy Means Test
SCP	Sehat Card Plus
SHI	Social Health Insurance
SHPI	Social Health Protection Initiative
SLIC	State Life Insurance Corporation
SSP	Sehat Sahulat Programme
UHC	Universal Health Coverage
WHO	World Health Organization

1. INTRODUCTION

1.1. Policy context

According to the World Health Organization (WHO) constitution, every human has the right to attain and sustain an optimal state of health. Health, a condition of complete physical, mental and social well-being, is attained through strong and resilient health systems. The basic functions of a health system include stewardship, resource generation, and healthcare financing.

The 2010 World Health Report on Healthcare Financing emphasised that achieving Universal Health Coverage (UHC) is a practical discourse in ensuring health as a human right. To achieve UHC, countries have taken various approaches ranging from establishing National Health Services (NHS) to instituting Social Health Insurance (SHI) models. Some countries, including Pakistan, have taken the middle way of a mixed health system with elements of both the NHS and the SHI approaches.

Historically, Pakistan has spent a very low percentage of its Gross Domestic Product (GDP) on healthcare. In 2018-19, Pakistan's expenditure on health care was 3.38% of the GDP. Public sector expenditure on health was 1.2% percentage points, with an Out-of-Pocket (OOP) expenditure of about 60%. Such a high OOP caused catastrophic health expenditure and necessitated social health protection initiatives to protect the vulnerable population.

Given low public health expenditure, high OOP expenditure, and widespread poverty, the Government of Khyber Pakhtunkhwa launched Sehat Sahulat Programme (SSP) at the end of 2015. SSP envisaged improving the population's health status and reducing poverty by reducing OOP expenditure. It initially covered 21% of the poorest poor in four districts and extended to all residents of Khyber Pakhtunkhwa in phases. Since its inception, it remains 100% subsidised by the Government and has been administered by the State Life Insurance Corporation (SLIC) of Pakistan.

Under the programme, more than 7.3 million families of Khyber Pakhtunkhwa, around 34 million residents, are enrolled for free inpatient healthcare services. The premium paid to SLIC is fixed per family, which includes the head of the family, spouse, and unmarried children, and has no limit on size. The programme's annual cost is around PKR 21 billion, approximately PKR 2800 per family per annum.

1.2. Initiation of the programme

SSP is a micro-health insurance programme set up as a partner-agent model. The Government of Khyber Pakhtunkhwa designed the programme and paid a premium to SLIC–the implementing partner selected through national competitive bidding–on behalf of the beneficiaries for delivering inpatient health services.

SSP provides inpatient healthcare services in selected public and private hospitals for a range of secondary and tertiary health services for up to one million PKR per family on a cashless basis. It also covers transportation costs in certain conditions, wage loss for up to three days of hospitalisation and funeral allowance to a family if a patient dies during treatment.

2. EVOLUTION OF THE PROGRAMME

2.1. Phase 1 of SSP

SSP was launched on 16 December 2015 in four districts of Khyber Pakhtunkhwa. It enrolled households based on a poverty census provided by the National Socio-Economic Registry (NSER) of the Benazir Income Support Programme (BISP), a national cash-transfer programme in Pakistan. NSER conducts a nationwide poverty scorecard survey to calculate the population's financial status through the Proxy Means Test (PMT). Families with a PMT score of 16.17 or less, making 21% of the poorest poor in the four districts of Khyber Pakhtunkhwa, were identified as eligible in the first phase.

The eligible families needed to be enrolled before using health services under the programme. SLIC was responsible for running enrolment drives on union council levels and information campaigns on SSP utilisation. The beneficiaries were provided with health insurance cards. The health cards carried a unique identifier for each enrolled family and were mandatory to produce at the time of utilisation.

The first phase of the programme was financially and technically supported by the Federal Republic of Germany through the German Development Bank (KfW). KfW financed 88% of the PKR 1.4 billion costs of premium. The remaining 12% was paid by the Government of Khyber Pakhtunkhwa from general tax revenues.

Services were limited to inpatient secondary healthcare services and were provided at selected public and private health facilities. The household size was capped at a maximum of 7 members, and the annual financial coverage was PKR 25,000 per person per year on a cashless basis.

2.2. Phase 2 of SSP

In August 2016, the programme was extended in population, financial and services coverage. It was extended to all districts of Khyber Pakhtunkhwa. The PMT score for eligibility was raised to 24.5, making 51% of the population eligible for the programme.

Limited tertiary healthcare services were introduced, along with wage replacement, transportation for maternity and tertiary care, burial allowance, and a one-time follow-up OPD (Outpatient Department) voucher. The household size was increased to 8 persons. The financial coverage for secondary care was increased to PKR 30,000 per person annually, and PKR 300,000 per household per annum was provided for newly introduced tertiary care.

The programme's annual cost was PKR 5.4 billion, financed entirely by the Government of Khyber Pakhtunkhwa. From phase 2 onwards, the Government of Khyber Pakhtunkhwa bears the financial cost of the programme.

2.3. Phase 3 of SSP

Phase 3 of the SSP was started at the end of November 2021. The PMT score for eligibility was increased from 24.5 to 32.5, making 69% of the population eligible under the programme. The financial coverage remained the same as in phase 2. However, the definition of enrolment unit changed from household to family. A household could include multiple families. The family composition was defined as husband, wife, and unmarried children. The size limit on the enrolment unit was abandoned. A family of any size was entitled to PKR 240,000 for inpatient secondary care and PKR 300,000 for inpatient tertiary care.

2.4. Phase 4 of SSP

Phase 4 of the programme brought several developments. Announced in August 2020, it expanded coverage to all residents of Khyber Pakhtunkhwa, irrespective of their financial status. The scheme's roll-out to the 100% population of Khyber Pakhtunkhwa was completed on 01 February, 2021, with the brand name revised from 'Sehat Sahulat Programme' to 'Sehat Card Plus'.

The financial coverage has been increased up to PKR 1 million per family. The tertiary care services have been enhanced, including breast cancer screening, management of neurological diseases and prostheses. For the first time, SSP in Phase 4 has included plans for voluntary top-up packages.

Sehat Card, which was mandatory to produce at the time of admission, is replaced with Computerized National Identity Card (CNIC). CNIC is issued by the National Database and Registration Authority (NADRA). It has a unique citizen identification number and is the legal authentication document for Pakistani citizens aged 18 years or above.

Using CNIC as a health card facilitated the enrolment process. Instead of running an enrolment drive across districts in previous phases, NADRA provides family details to SLIC. It eliminated the chances of missing out on enrolment and facilitated the up-gradation of the family trees.

3. FROM SEHAT SAHULAT TO SEHAT CARD PLUS

3.1. The rationale for universal population coverage

The Government of Khyber Pakhtunkhwa has extended coverage to the entire population to promote equity. The entire population has access to a basic benefits package, which is a hallmark of the transition toward UHC. Additionally, the 100% population coverage has eliminated the error of inclusion and exclusion that were reported with the NSER data. The 100% population coverage now offers an opportunity to move towards comprehensive coverage, in which the population would be expected to contribute to enhancing their benefits package.

3.2. Key aspects of the coverages

The programme covers secondary and tertiary care services. Secondary services are provided at the district level, by the district headquarter hospitals or through private providers who meet predefined empanelment criteria. The tertiary care services are provided by the public sector teaching hospitals or their equivalents in the private sector. Basic features of the treatment package are provided in Table 1.

Table 1 **Benefits package and limits of financial coverage**

Treatment Package	Coverage under Sehat Card Plus
Secondary care	
Initial coverage for secondary care (basic treatment)	**200,000** PKR per family per year
Secondary care (basic treatment)	• Ear, nose and throat surgeries • Fractures and injuries • General medicine admissions • General orthopaedic services • General surgical interventions • Maternity services (Normal deliveries, C-section) • Ophthalmology services requiring admissions • Paediatric admissions
Tertiary care	
Initial coverage for tertiary care (advance treatment)	**400,000** PKR per family per year
Additional coverage for tertiary care	**400,000** PKR per family per year
Tertiary care (advanced treatment)	• Accident and emergency • Artificial limbs (Prosthesis) • Breast cancer screening • Cancer treatment (Chemo, Radio, Surgery) • Cardiovascular (Angioplasty, bypass) • Diabetes • Intensive care • Kidney diseases (Dialysis) • Kidney transplant • Management of neurosurgical diseases
Total coverage for treatment	Up to **1,000,000** PKR per family per year
Additional benefits	
Amount of wage loss	**250 PKR** per day for three days
Maternity allowance	**1,000 PKR** (transportation)
Transportation allowance	**2,000 PKR**
Funeral allowance	**10,000 PKR**

3.3. Coverage portability

Besides generous treatment packages, patients from Khyber Pakhtunkhwa can get treatment in hospitals outside Khyber Pakhtunkhwa that are on panel in the Federal Sehat Sahulat Program. The federal SSP, launched on a pattern similar to the Khyber Pakhtunkhwa programme, is funded by the Federal Government of Pakistan and administered by SLIC. The same insurance company in both programmes provides inter-provincial portability for beneficiaries to access services in any panel hospital across Pakistan. Currently, SLIC has around 1,000 hospitals on its panel across Pakistan.

3.4. Steps in the patient journey under the Sehat Card Plus

There is a clear-cut admission authorisation and follow-up model under the programme. This entire process is described in a stepwise manner, as follows:

Step 1: The patient's eligibility is checked

- The patient visits the SCP counter to check their eligibility. The patient-Health Facilitation Officer (HFO) interaction involves CNIC or Form B as input.
- If the patient is covered, a system-generated referral letter is provided, and the patient visits the hospital OPD/emergency.

Step 2: Patient visits a doctor in the outpatient/emergency room (referral form is filled)

- The patient takes the referral letter, makes an OPD slip, visits the doctor, undergoes examination and lab tests, and if admission is needed, the referral letter is filled by the doctor and returned to the HFO by the patient.
- The patient's diagnosis paper and proposed treatment/surgical procedure are written on the OPD paper. The same details are to be entered on the referral form for the insurer's record.
- If the patient does not need hospital admission, the patient will absorb the cost of the consultation fee and labs. The hospital would refund all the patient's expenditure if admission was advised, as SCP envisaged these expenses as part of the package rates.

Step 3: The patient is admitted through the hospital's admission office and the SLIC database.

- The patient takes the OPD slip and referral letter to the hospital admission office. The admission is processed, the patient chart is prepared, and a bed is allocated.
- Concurrent with the hospital admission, the patient is also admitted to the inpatient list of the SLIC database.

Step 4: Patient gets treatment at the hospital

- The patient is now under the care of the inpatient medical team.
- All treatment would be provided at zero cost to the patient against a package rate agreed between the insurer and the hospital.
- The package rate would include all charges, excluding transportation costs, pertaining to a particular treatment/procedure (up to the cost of the general ward), including registration charges, admission charges, accommodation charges, cost of medicines, labour room, operation/procedure charges, anaesthetist charges, nursing and paramedic charges, doctor/consultant visit charges, monitoring charges, operation theatre charges, cost of the implant, procedural charges/surgeon's fee, cost of disposable surgical material and cost of all sundries used during hospitalisation, related routine investigations, physiotherapy charges etc. from the time of admission till discharge. This also includes all subprocedures

and all related procedures to complete the treatment.

- The package rate will also include all complications related to the treatment procedure performed, one post-discharge follow-up visit in maternity and surgical cases and pre-and-post hospitalisation medicines up to 1 day before hospitalisation and up to 5 days from the date of discharge from the hospital.
- The DMO would visit the admitted patients to ensure that good quality medical care was being provided.
- Deciding the treatment is the sole prerogative of the hospital.

Step 5: The patient is discharged from the hospital and the insurance database

- After the treatment is complete, the patient is discharged and provided with the clinical team's discharge summary/slip. The discharge summary contains medicines prescription for home care.
- As part of the package rate, the patients on discharge get medicines for home for five days. The patient is also entitled to one free follow-up checkup.
- The patient presents the hospital discharge slip to the HFO. The HFO prints a system-generated discharge summary from the insurance database.
- The patient is informed about the remaining balance and provided a feedback form. The patient fills out the feedback form and gives it back to the HFO.

Step 6: The patient gets a call from NADRA

- Upon discharge, the patients get a phone call from NADRA. The NADRA provides a third-party service to the programme.

Step 7: Claims are prepared jointly by the HFO and hospital representative

- A hospital representative provides copies of all the clinical records to the HFO.
- The hospital provides a covering letter with the documents to the HFO.
- The HFO prints a system-generated claims sheet and attaches all the documents with it.

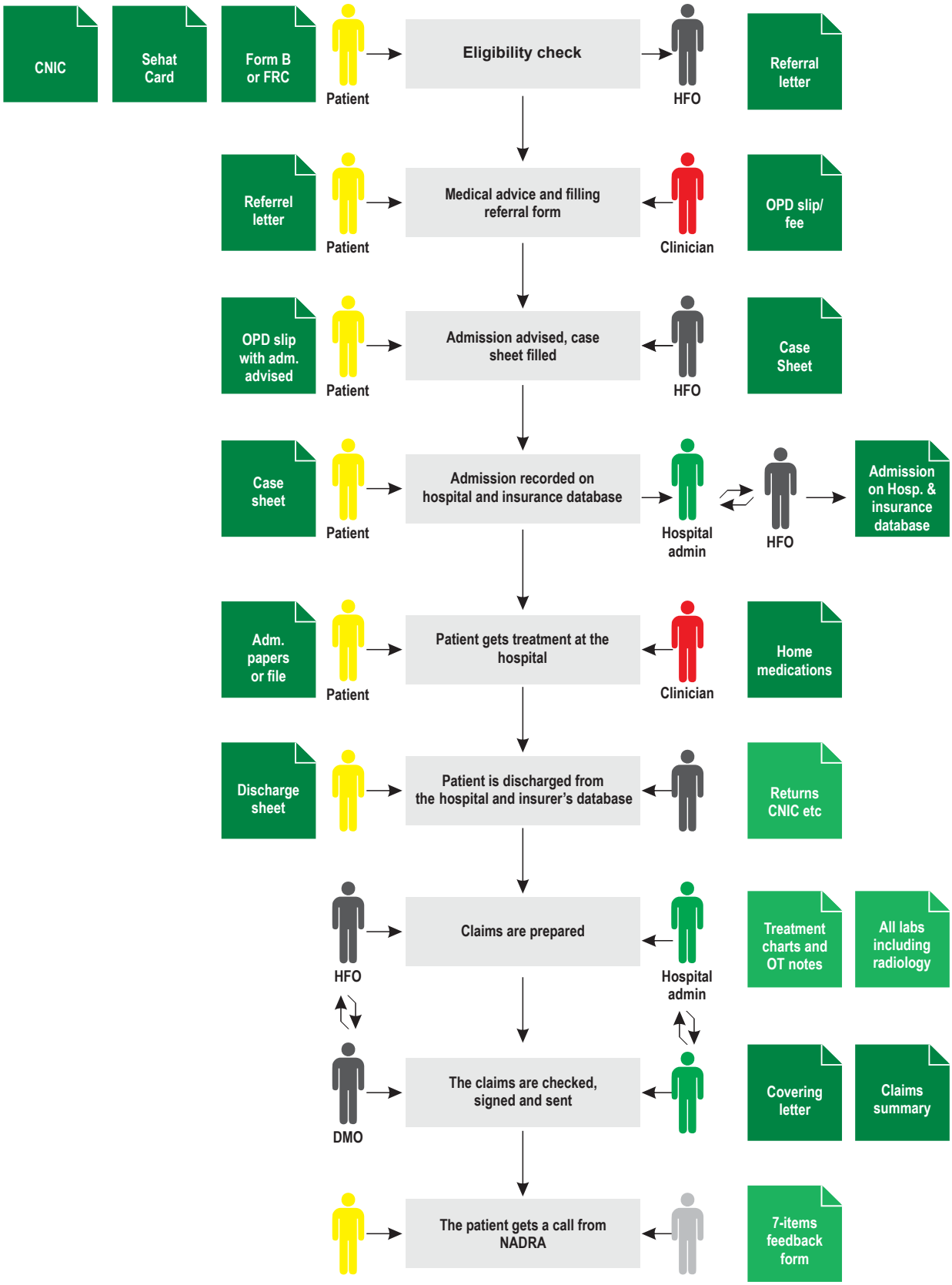
Step 8: The claims are checked and signed

- The HFO presents the claims to the DMO for checking and signing.
- Both the HFO and the DMO put their signatures and stamps on each claim.

Step 9: The claims are sent to the head office

- After the claims are checked and signed by the HFO and DMO, the claims are sent to the insurer's zonal office by the hospital.

Figure 1 Mapping of the hospital-based processes



4. FIRST ANNUAL REPORT UNDER THE UNIVERSAL COVERAGE

Good health systems are learning health systems. Since one year of the universal population coverage is complete, the programme deemed it necessary to systematically analyse the data, identify the strengths, look for weaknesses, and reflect on the experience to improve the programme. The following pages will describe the one year of experience with 100% population coverage.

4.1. Overview of the utilisation of the services

An overview of the utilisation of the services (hospital admissions) for 2021 is provided in Table 2. The services were predominantly in the private sector for secondary care, followed by tertiary care in the same sector.

Table 2 Utilisation trends by type of provider and level of care

Hospital Type	Coverage	Admissions	Percentage
Private Hospital	Secondary	234,224	43
Private Hospital	Tertiary	138,576	25
Public Hospital	Secondary	763,98	14
Public Hospital	Tertiary	915,09	17
Public Private Partnership	Secondary	684	1
Total		541,391	100

The sector-wise utilisation, level of care accessed and gender wise breakdown of the hospital admission are provided in Table 3.

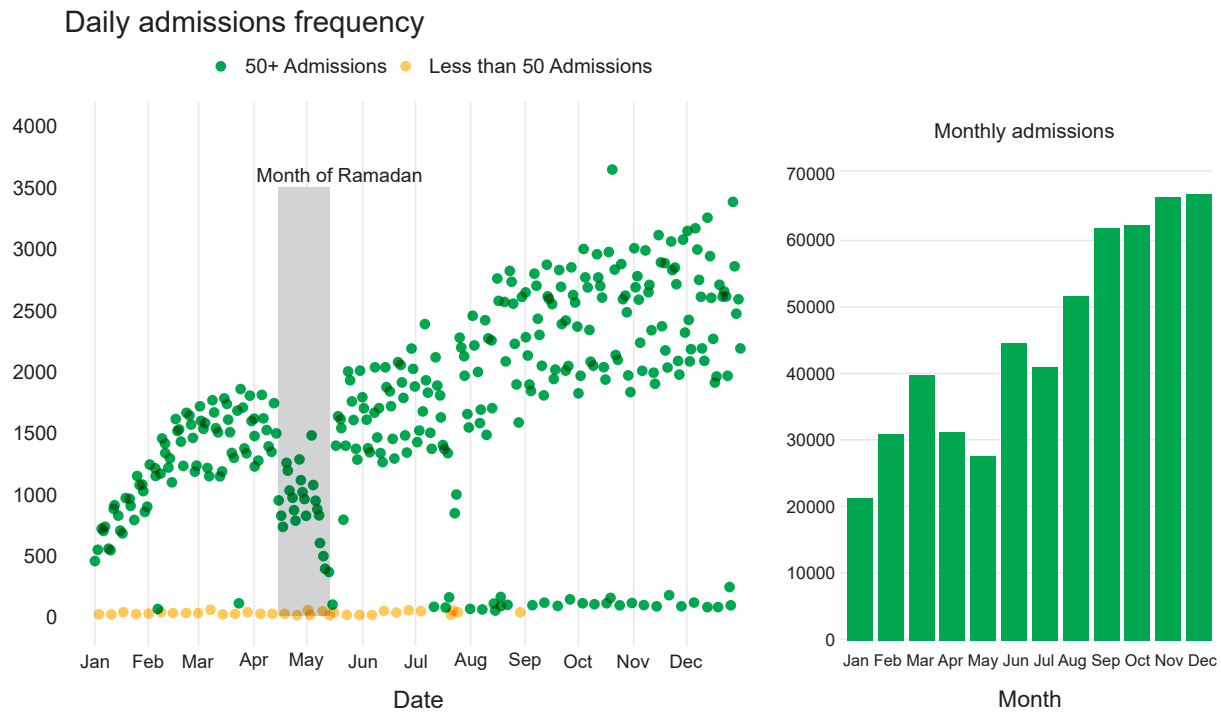
Table 3 Overview of the hospital admissions in 2021

	Sectorwise (n = 544,157)		Treatment wise (n = 541,391)		Gender wise (n = 544,841)	
	Public	Private	Secondary	Tertiary	Male	Female
Admissions	171,233	372,924	311,306	230,085	260,614	284,227
Percentage	31%	68%	57%	42%	48%	52%

The age of the beneficiaries ranged from less than a year to 122 years. The mean age was 41.7 years, while the median age was 40 years. The Average Length of Stay (ALoS) differed widely between the public and private sector hospitals. The ALoS for private hospitals was 1.1 days, and for public hospitals, it was 2.7 days. The situation varied by the coverage type as well. The highest ALoS was 2.9 days for secondary care in the public sector, followed by 2.6 days for tertiary care in the same sector. The ALoS for tertiary care was lesser than secondary because many tertiary admissions and discharges happen the same day, e.g., for dialysis, chemotherapy, and radiation therapy.

The number of admissions increased as the programme implementation progressed. Figure 2 provides the overall utilisation daily and monthly trends for 2021.

Figure 2 Hospital utilisation (admission) trends



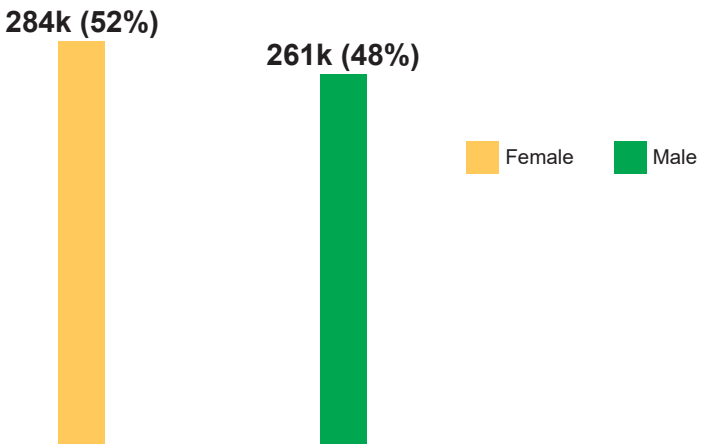
A decline in admissions between mid-April and mid-May appeared because of Ramadan—a month of fasting observed by Muslims. On some days, there were less than 50 admissions. Eighty-six percent of those days were Sunday, which is a rest day for most of the SLIC staff.

4.2. Utilisation of services stratified by patient demographics

4.2.1. Utilisation stratified by gender

In 2021, 544 841 hospital admissions were recorded. Overall, the programme utilisation rates for females were better than for males. Of the total admissions in 2021, 52% were recorded for women and 48% for men. This gender distribution is shown in Figure 3.

Figure 3 Services utilisation by gender



A finer look at the data shows that tertiary care admissions were higher for males than females. Secondary care admissions were higher for females, mainly because of maternal care. Figure 4 and Figure 5 show the gender and care-wise distributions with and without maternity services.

Figure 4 Services utilisation by gender (including maternity services)

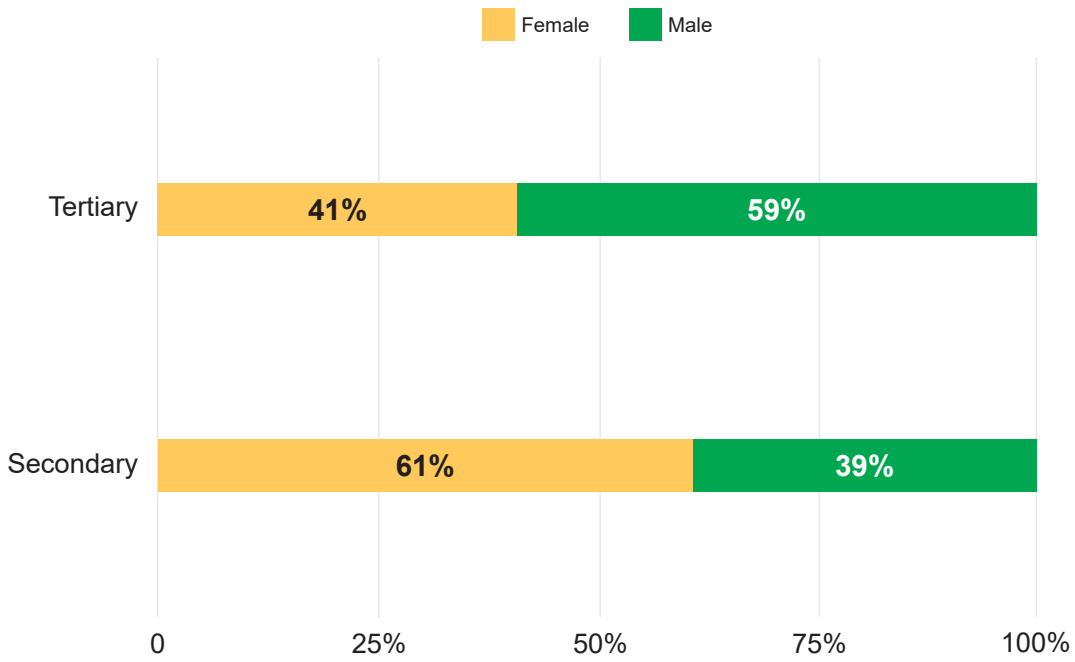
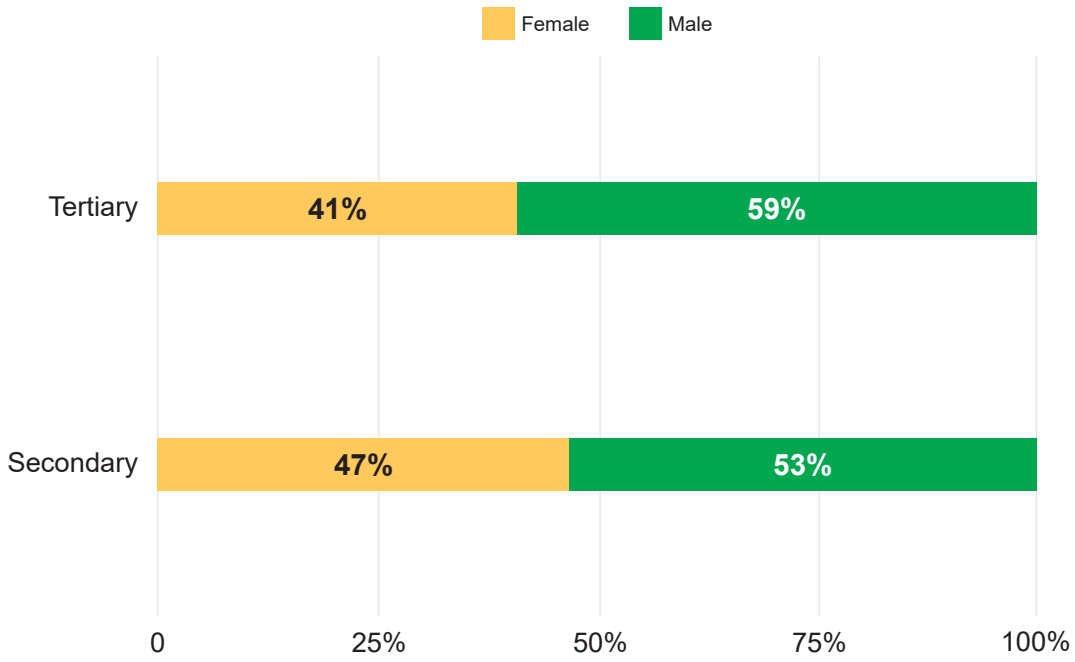


Figure 5 Services utilisation by gender (excluding maternity services)



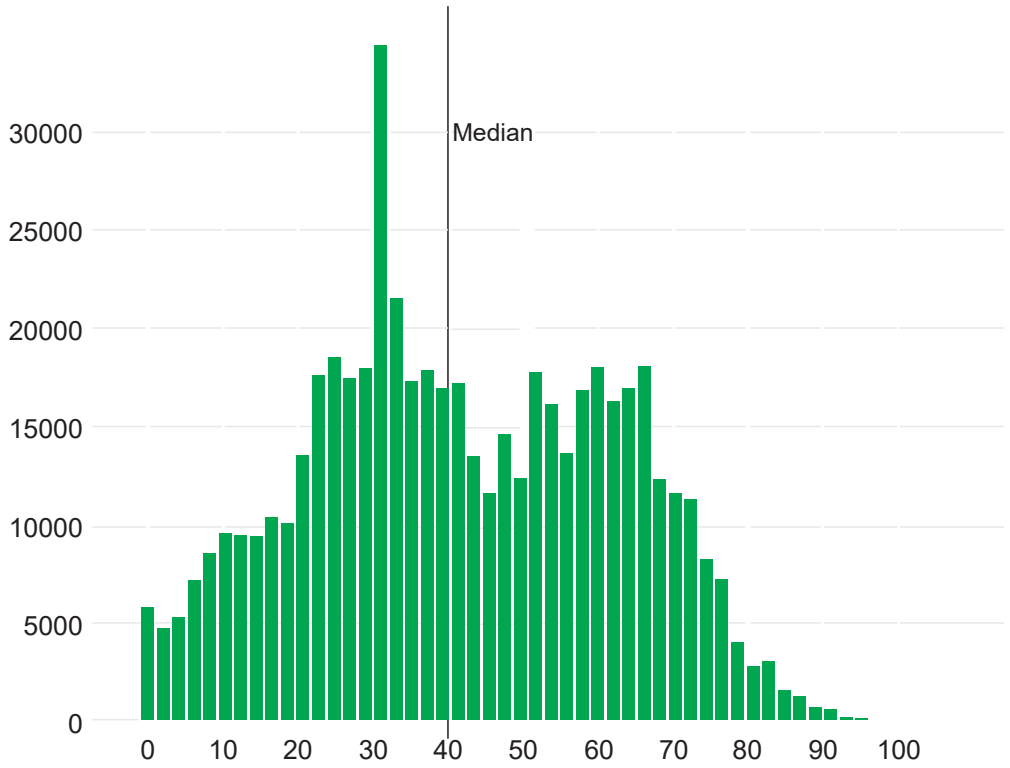
A gender reversal was noted in the type of care utilised. The tertiary care admissions were higher for males (59%) than for females (41%). Secondary care admissions were reverse of the tertiary care, with higher rates for females (61%) than males (39%). Women's higher utilisation of secondary care was predominantly because of maternity cases. This also reflects the programme's facilitation in providing essential and emergency health care services to women and their newborns at the hand of skilled birth attendants, reducing the chances of maternal and neonatal deaths.

Further analysis of the data shows that Paediatric, Urology, Orthopaedic, Cardiology and General Surgery services were more frequently used by men. On the other hand, females reported a higher number of admissions in Oncology and Neurosurgery.

4.2.2. Utilisation by age

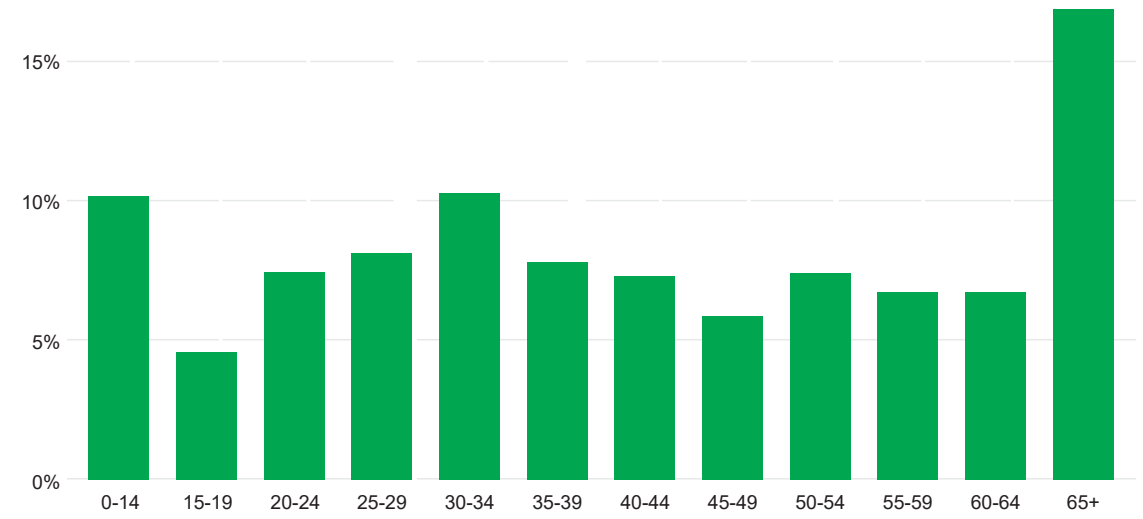
The admissions trend (Figure 6) shows that utilisation in the twenties and thirties is larger than other decide groups. This might be due to various factors, including the structure of the population pyramid and higher rates of accidents among men and pregnancy-related admissions among women.

Figure 6 Services utilisation by age



When clubbed into age categories, higher utilisation (in absolute terms) was noted in the older age group. This is in line with the epidemiological trends of higher disease burden among the elderly. As shown in Figure 7, more than 15% of the hospital admissions were recorded in the population aged 65 years and above.

Figure 7 **Services utilisation by age group**



4.2.3. Utilisation by age group and gender

The cross-examination of admissions by age and gender provided valuable insights. Figure 8 shows utilisation by males and females in different age groups. At extremes of ages, utilisation by men outweighs women. In the reproductive age groups (20-40 years), utilisation by women outweighs men. On the other hand, there is higher utilisation of services for young boys compared to girls in the paediatric age group. Although the programme provides equal access and coverage to both genders, the social factors behind this phenomenon need to be explored and addressed.

Figure 8 **Admissions by age group and gender**

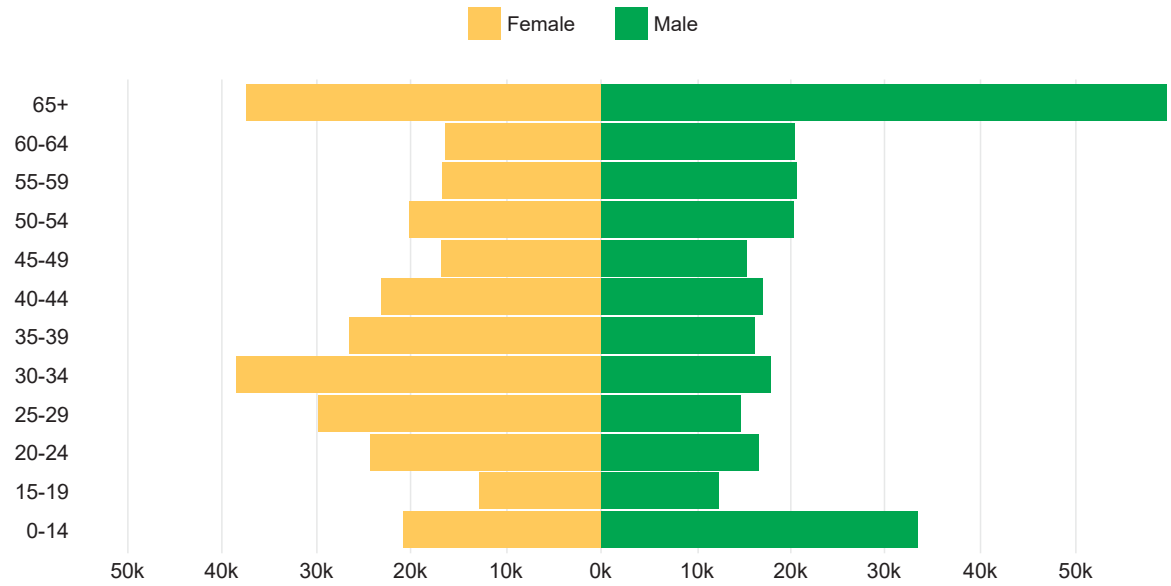
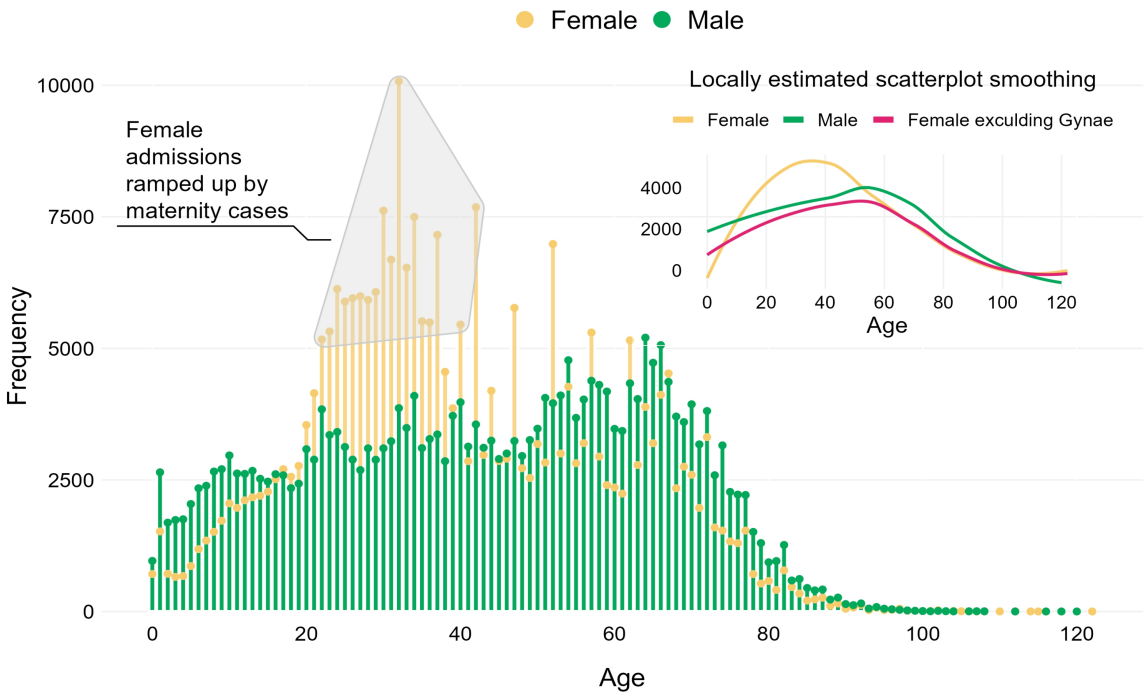


Figure 9 provides the gender-wise age distribution of patients. It shows a notch in utilisation among females in the 20 - 40 years age group. This is predominantly caused by maternity cases. In a subplot of Figure 9 is a locally estimated scatterplot smoothing for the age distribution of males, females, and females excluding maternity cases. It depicts that controlling for maternity services, utilisation by males exceeded females for almost all ages. A similar reversal was observed in Figure 5. An increase in utilisation by females in the 20 - 40 age group due to maternity cases is common across insurance programmes.

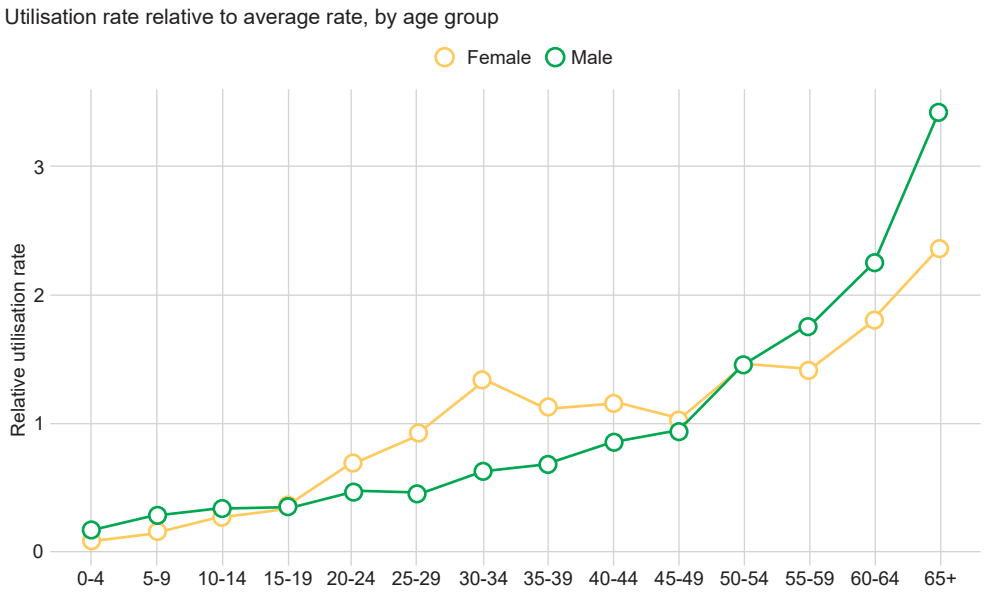
Figure 9 Hospital admissions by age and gender



4.2.4. Relative utilisation rates by age group and gender

Accounting for difference in population size (enrolled beneficiaries) in age groups, Figure 10 shows the utilisation rate (per 100,000 population) in the age groups relative to average utilisation. The relative utilisation rate represents the utilisation rate of an age group divided by the average utilisation rate of all age groups. The figure indicates high utilisation in old age groups.

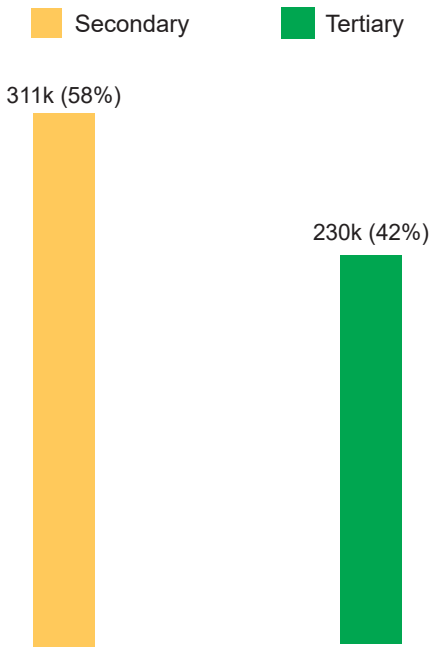
Figure 10 Relative utilisation rates by age group and gender



4.3. Utilisation by type of services

The services utilised were dominated by secondary care. Of the admissions analysed, 58% were in the secondary while 42% were under the tertiary category.

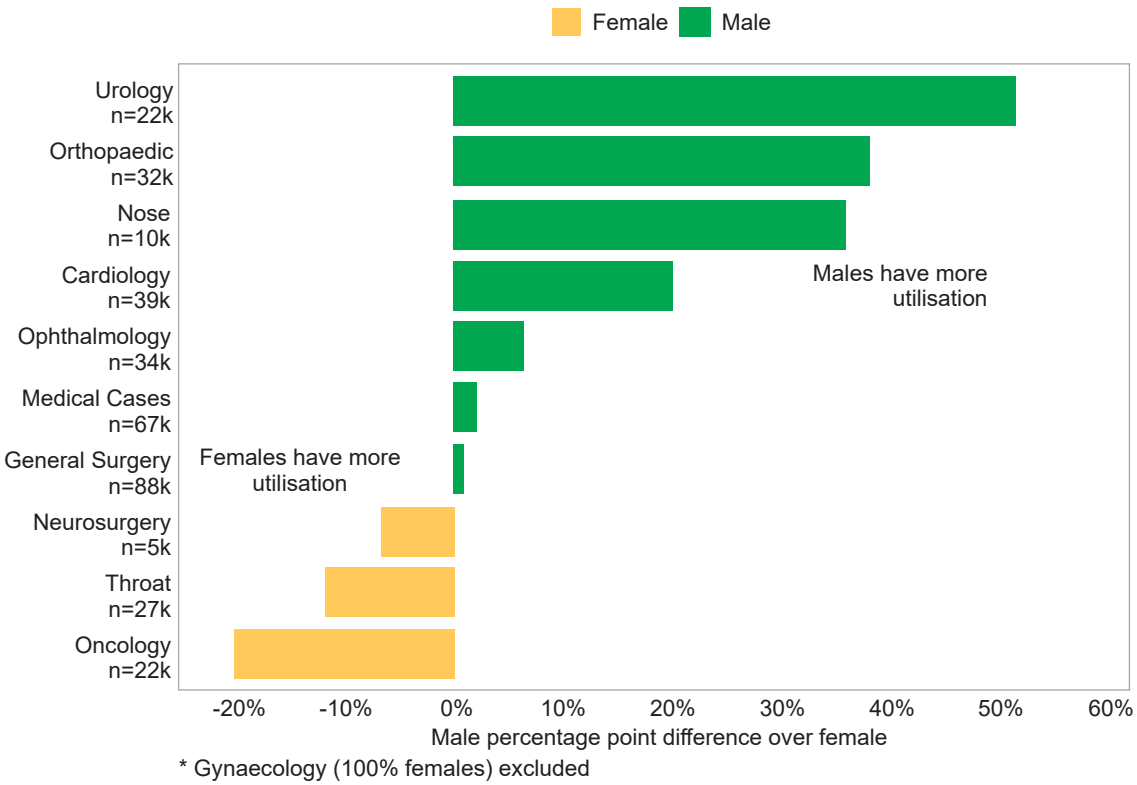
Figure 11 Hospital admissions by type of care



4.3.1. Percentage point difference in leading treatments by gender

The gender gradient was noted in the most common treatments used under the programme. In oncology, throat, and neurosurgical interventions, females outweighed men (Figure 14). In all the rest, men utilised services more than females.

Figure 12 Difference in service utilisation by gender (10 frequent treatments)



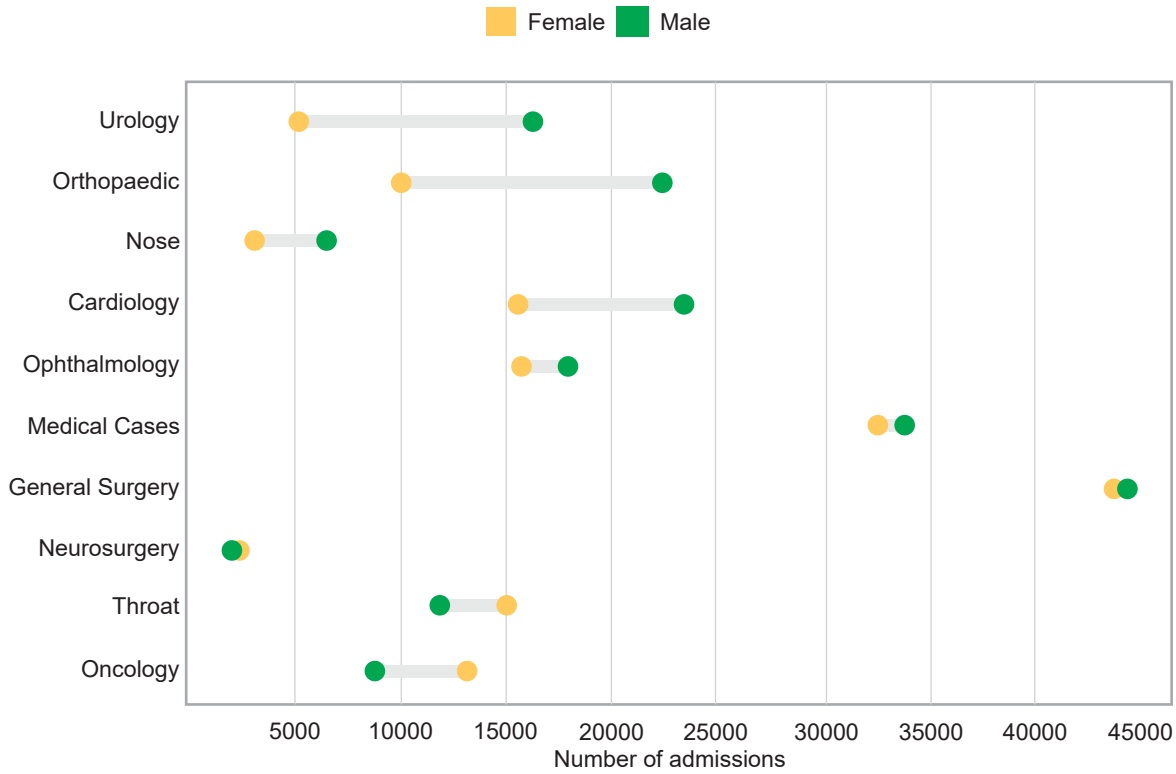
* Gynaecology (100% females) excluded

4.3.2. Admissions by gender in leading treatments (absolute terms)

Figure 13 provides the gender-wise difference in admissions in absolute terms for 10 most frequent treatments. The line length between the dots shows the difference in utilisation. The greater differences where the men outweighed women were in urology, orthopaedics, and cardiology.

Females utilised service more than men in neurosurgery, throat care and oncology, but the difference in absolute terms was less than 5,000 admissions.

Figure 13 Hospital admissions by gender in leading treatment groups

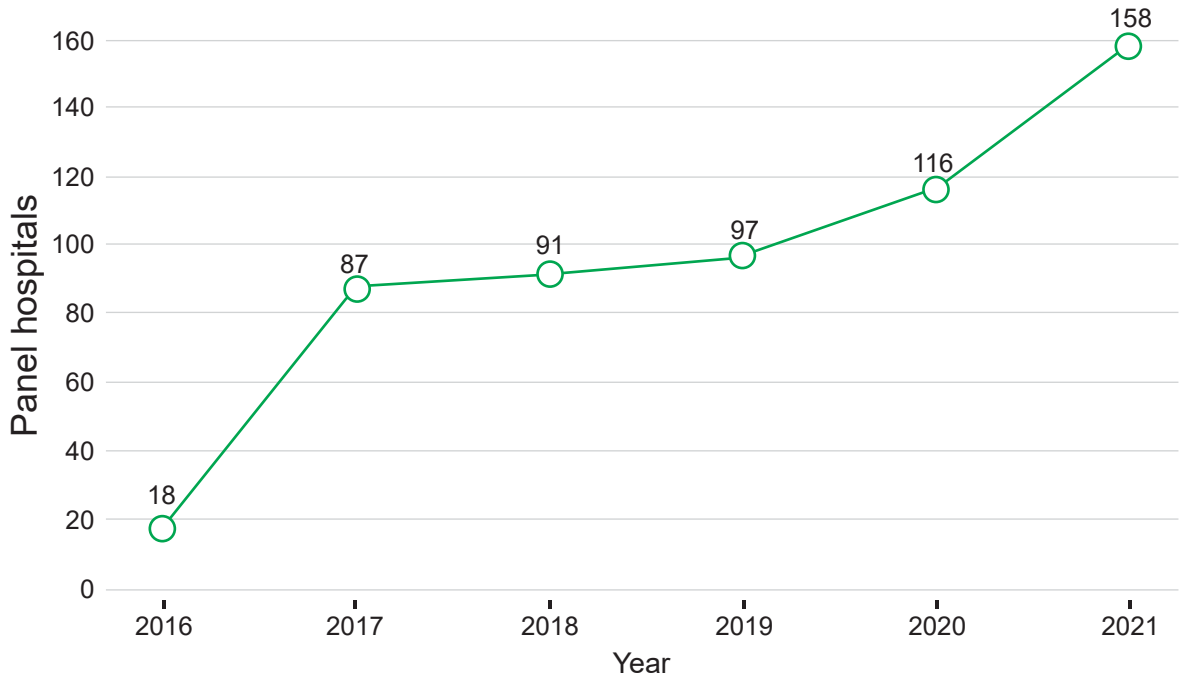


4.4. Utilisation by type of service providers

The programme has cross-country portability. People from Khyber Pakhtunkhwa can utilise services at any of the State Life panel hospitals across Pakistan. However, for brevity, we looked at admissions in hospitals in Khyber Pakhtunkhwa only. All the graphs in this section are for admissions in Khyber Pakhtunkhwa hospitals only.

4.4.1. Composition of the panel hospital

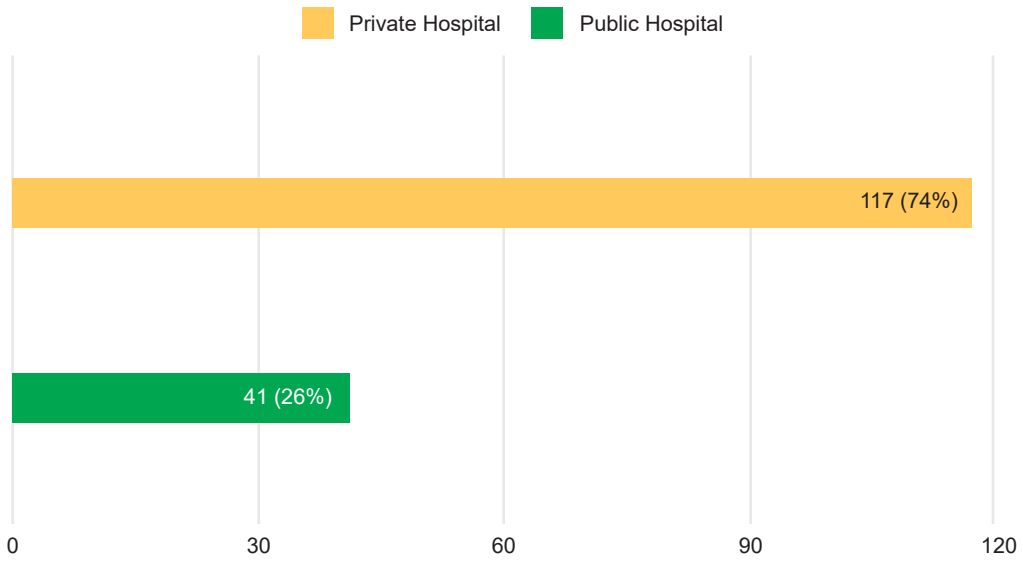
Figure 14 Panel hospitals trend



The programme empanels both public and private hospitals if the hospitals fulfil the criteria. With expansion of the programme, the number of panel hospitals also increased. Figure 14 shows the trend in enrolled hospitals over the years. Majority of the hospitals have been under private ownership. In the later years, a significant number of hospitals from remote areas appeared on the panel contributing to geographical equity in services utilisation. The number of enrolled hospitals, however, fluctuates due to routine monitoring of service quality by SLIC. Hospitals that fail in providing quality care to patients and fail to maintain qualified sta ffor do moral hazard are either suspended till the reservations are resolved or dropped from the panel.

A total of 158 hospitals appeared in the 2021 utilisation data. Of the 158 hospitals, 117 (74%) were private sector hospitals, while 41 (26%) were public (Figure 15). Only one was a 'Public-Private Partnership' hospital, which was excluded on certain occasions in this report.

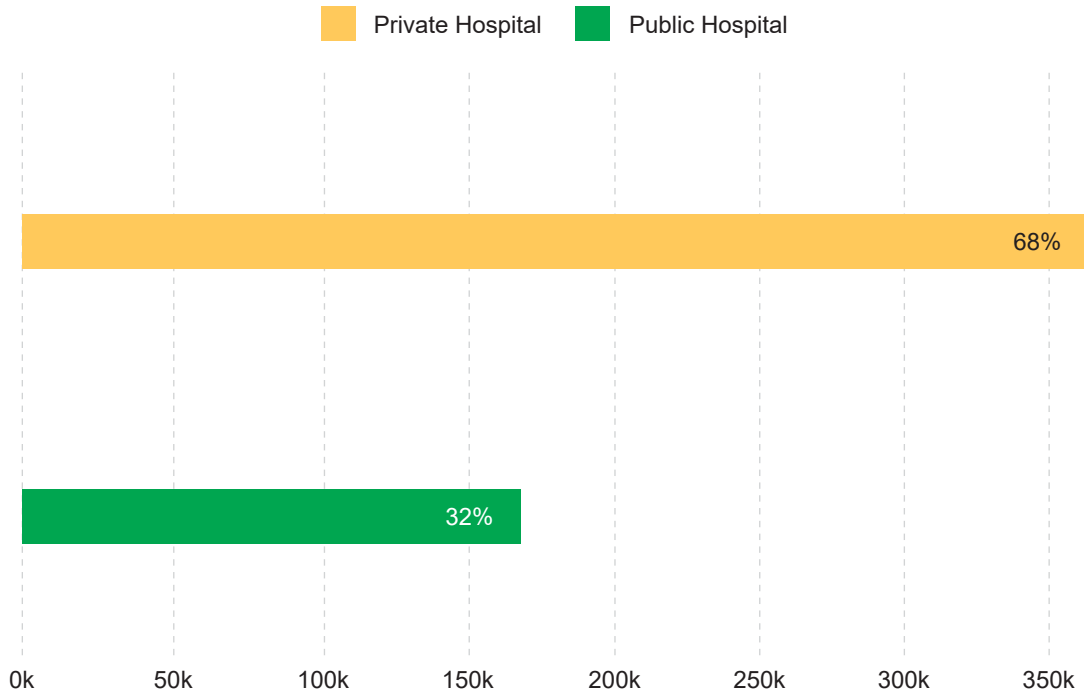
Figure 15 Panel hospitals by hospital ownership



4.4.2. Admissions by hospital type

Commensurate with the number of hospitals, services utilisation in the private sector remained higher (68% of the admissions) than in the public sector (32%) (Figure 16). Private hospitals are more in number than public hospitals, accounting for more aggregate admissions. However, the mean admissions by public and private hospitals differ significantly (Figure 17).

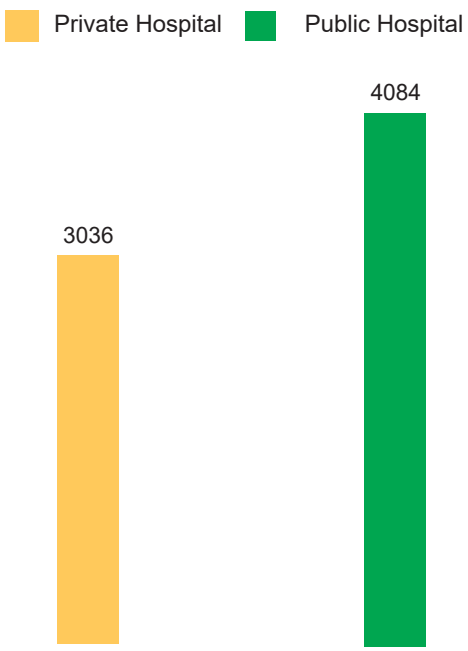
Figure 16 Percentage-wise admissions by hospital ownership



4.4.3. The average number of admissions by hospitals

There was a marked difference in the average number of public and private sector hospital admissions. In the public sector, hospitals had an average of 4,084 admissions, while the private sector had an average of 3,036 in one year.

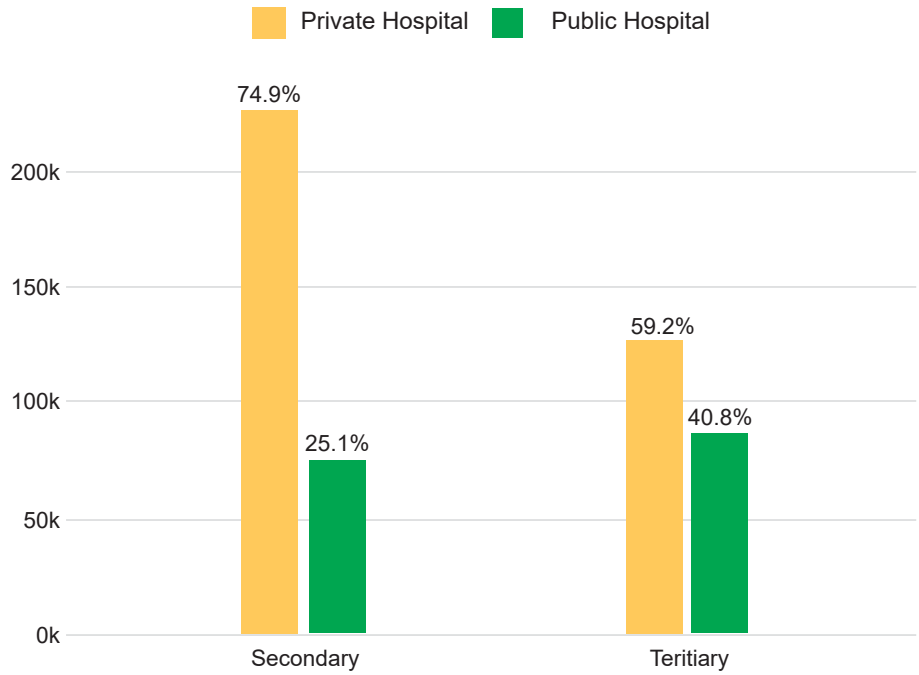
Figure 17 Average number of admissions by hospitals



4.4.4. Admissions by hospital type and care type

The average number of admissions in private sector was lower than in public sector. Still, considering their abundance, the total admissions in both secondary and tertiary care were more frequent in the private sector. The gap is wider for secondary care, where three-quarters of the care was in private hospitals (Figure 18).

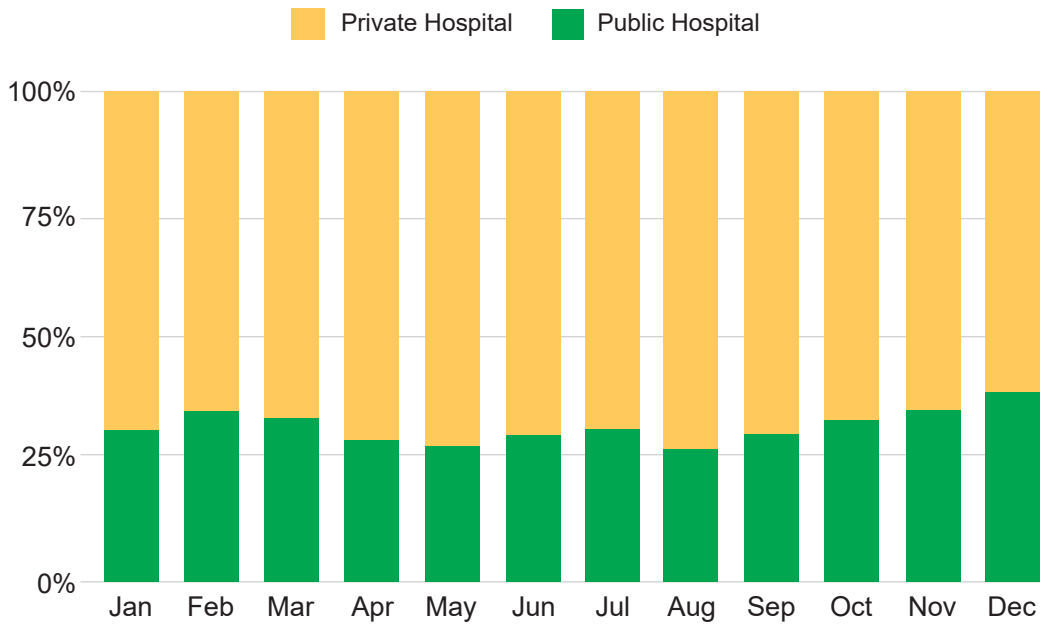
Figure 18 Admissions by hospital type and care type



4.4.5. The monthly admissions by hospital type

The monthly admission trend by hospital type almost remained the same. Figure 19 shows a slight upward trend in admissions from August to December in the public sector.

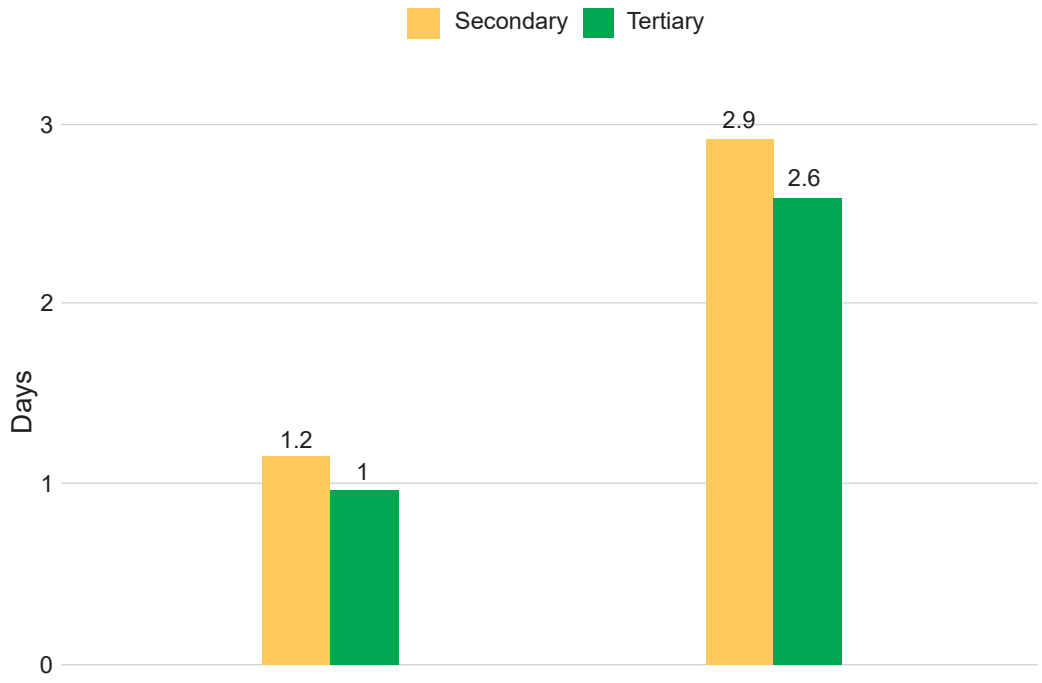
Figure 19 Monthly admissions trend by hospital type



4.4.6. Length of stay by hospital and coverage type

The Average Length of Stay (ALoS) in the private sector was significantly shorter than in the public sector. But, in both instances, the ALoS for tertiary care was shorter than for secondary care. This is mainly due to the same-day admission and discharges for dialysis and oncology services (both chemo and radiation therapy), driving down the average.

Figure 20 Length of stay by hospital and coverage type

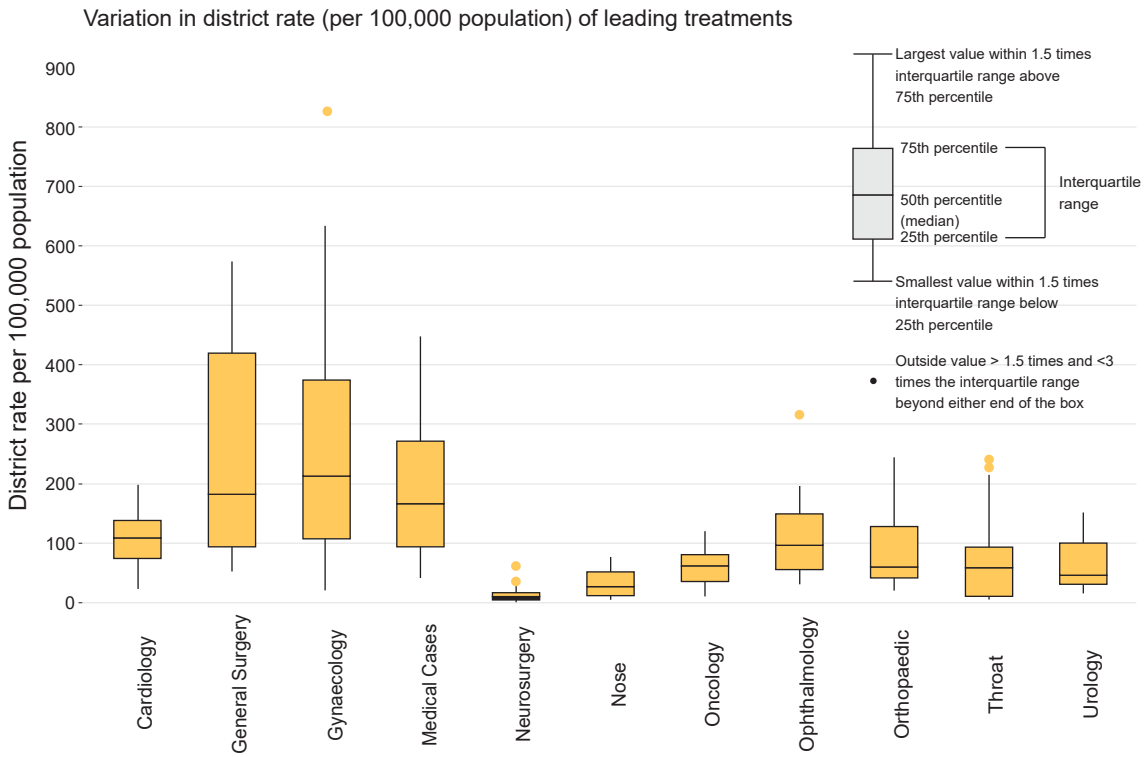


4.5. Utilisation by geographical distribution

4.5.1. Geographical variability

Some services distribution under the programme was not uniform across districts. There were differences in the district-wise utilisation of services, as shown in Figure 21.

Figure 21 Geographical variability in utilisation rates for common treatment



For instance, in some districts the number of admissions in general surgery was around 100 per 100,000 population, while in others, it was above 400.

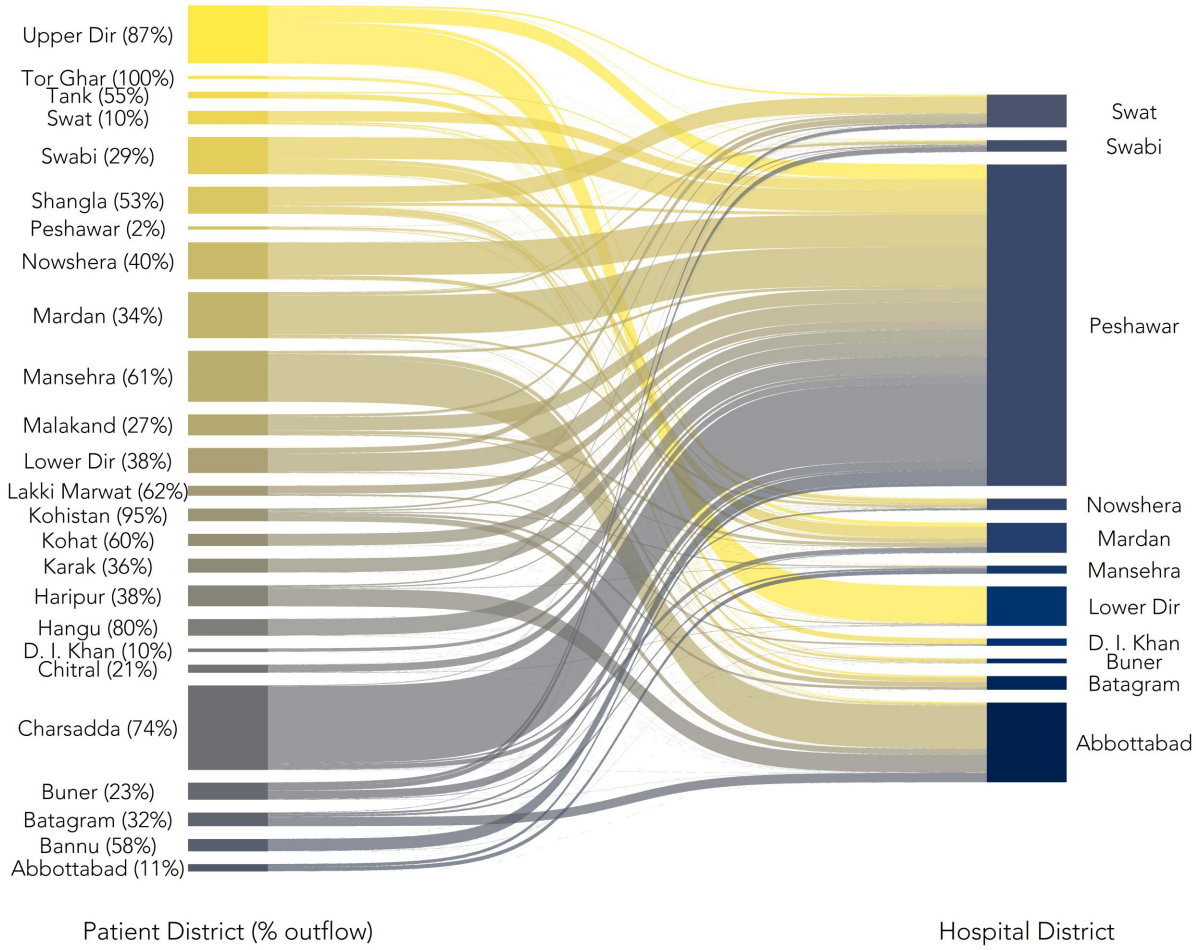
4.5.2. Inter-district patient movement

There was a huge inter-district movement for hospital admissions, as shown in Figure 22. The left-hand side shows the districts of residence of patients, and the right side shows the districts of the hospitals. The height of the quadrilateral on both sides (next to district names) indicates the frequency of patient inflow and outflow for a district. The percentage of patients treated outside their district of residence is along with the districts of the patients' residence.

On the right side, we show the top 12 districts that received most patients from outside districts; on the left side, all districts of Khyber Pakhtunkhwa. The figure shows that most patients seeking out-of-district care ended up in Peshawar, followed by Abbottabad, Lower Dir, Malakand, Swat, and Mardan. On the other hand, the districts where the need for out-of-district care arose (in absolute terms) were Charsadda, Mansehra, Upper Dir, and Swabi. Lower Dir and Mardan appear in both the top destination and top senders of the inter-district patient flow.

Percentage-wise, Upper Dir, Tor Ghar, Kohistan, Hangu, and Charsadda have the highest number (above 70% in each district) of out-of-district treatments, indicating undersupply of healthcare services in these areas. For instance, only two hospitals from Upper Dir, two from Hangu, one from Kohistan, and four from Mansehra were on the panel. On the other hand, nine hospitals from Lower Dir, 15 from Swat, and 10 from Abbottabad were on the panel. In some cases, empanelled hospitals were relatively high, but they did not necessarily provide all specialised services, for instance, Mardan, and therefore, patients travelled to districts such as Peshawar for treatment.

Figure 22 **Inter-district patient movement**

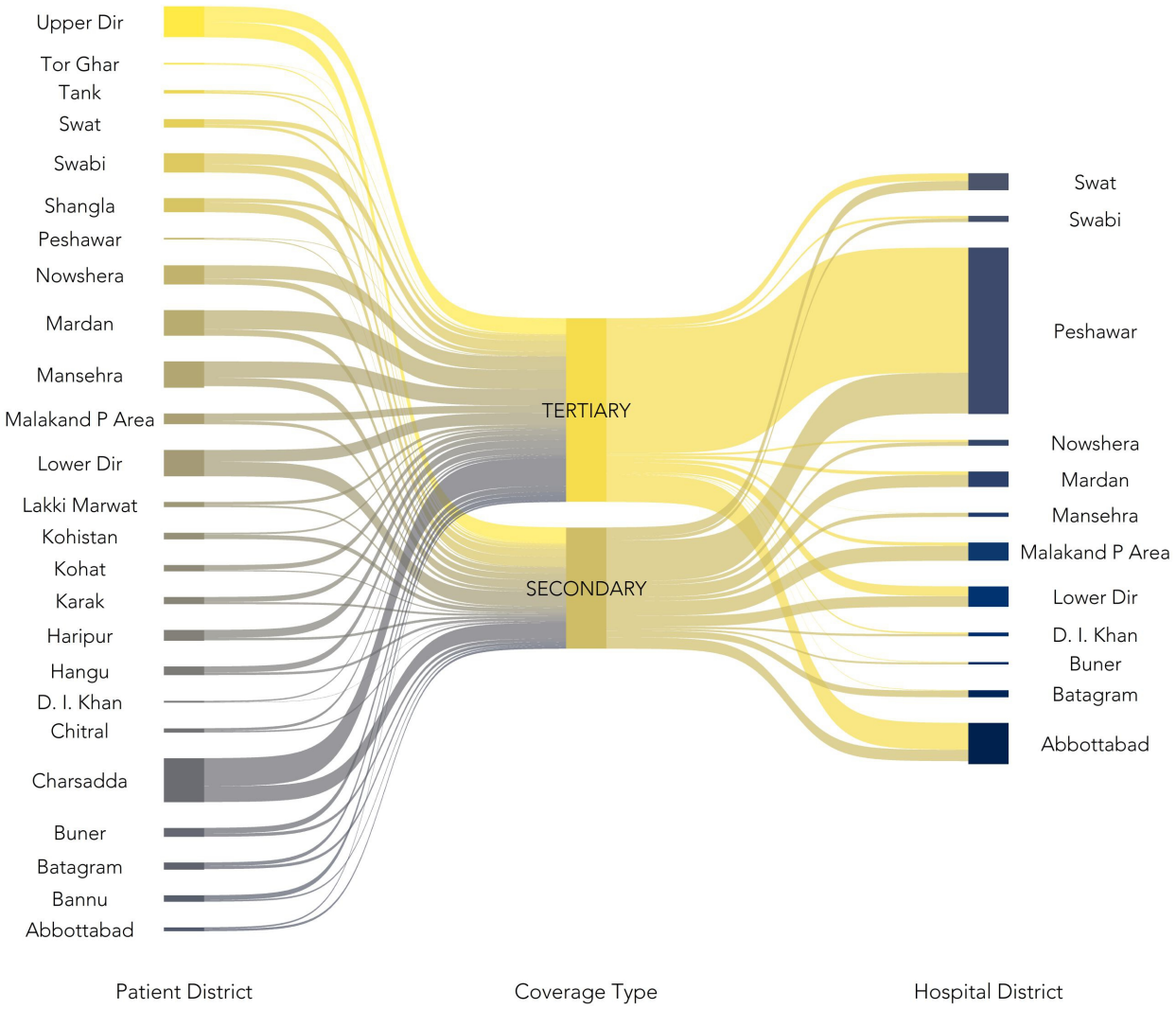


4.5.3. Inter-district patient movement stratified by type of care

The inter-district patient mobility was further explored and stratified by the type of care needed. Figure 23 shows that Peshawar received a major volume of patients for tertiary care, followed by Abbottabad. Patient-inflow to Peshawar for secondary care is comparatively also high.

However, given the significant number of hospitals enrolled in 2021, it is expected that the outside-district flow would decrease.

Figure 23 **Inter-district patient movement stratified by type of care**



4.5.4. Cross-district variability in utilisation by treatment lines

We further looked into the data to understand the geographical variability. There was substantial geographical variability in utilisation rates, as shown in Figure 26 and Table 4. For instance, the number of cardiology admissions per 100,000 population in Malakand was 201 compared to only 25 in Kohistan. Similarly, Malakand posted 585 admissions per 100,000 population for general surgery compared to 51 in Kohat.

For gynaecology, the highest number of admissions per 100,000 population was recorded in Batagram (n=827) and the lowest in Bannu (n=20). Battagram similarly toped utilisation of services in Opthalmology (n=315) compared to the lowest in Haripur (n=31). In Oncology, the highest admission rates were in Abbottabad, while Bannu scored another low (n=11) (see Table 4 and figure 24 for details). The low utilisation rates in certain districts could be because of undersupply of health services, durational effect—initially, newly enrolled beneficiaries have a low propensity to claim—or demographic factors.

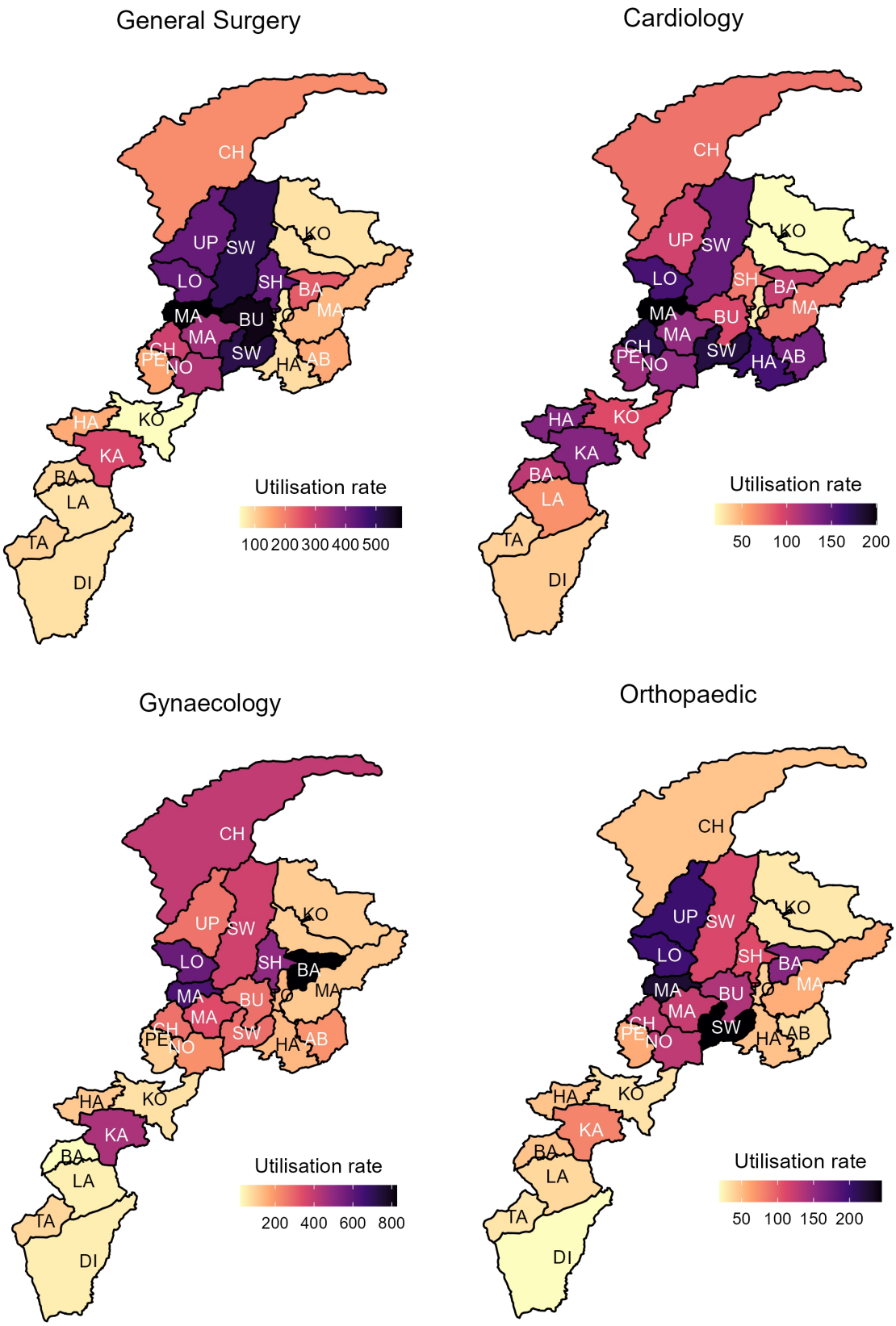
Table 4 Geographical variation in utilisation rates for the most common treatment groups (per 100,000 population)

District	Line of Treatment					
	Cardiology	General Surgery	Gynaecology	Orthopaedic	Ophthalmology	Oncology
Abbottabad	140	145	206	34	149	120
Bannu	108	95	20	47	55	11
Batagram	104	244	827	158	315	70
Buner	95	571	273	137	161	67
Charsadda	175	288	271	125	96	94
Chitral	75	182	403	47	93	33
D. I. Khan	38	84	46	19	185	34
Hangu	134	144	110	47	99	60
Haripur	161	89	140	48	31	102
Karak	132	272	448	80	59	36
Kohat	92	51	69	32	32	46
Kohistan	20	82	105	30	35	25
Lakki-Marwat	62	81	43	37	157	17
Lower Dir	160	420	576	198	110	78
Malakand	201	585	633	225	118	67
Mansehra	74	131	109	57	190	100
Mardan	125	344	341	123	90	73
Nowshera	126	322	212	128	59	70
Peshawar	121	152	100	59	54	58
Shangla	74	428	497	108	105	53
Swabi	180	514	278	245	196	80
Swat	145	506	375	112	53	91
Tank	37	100	88	31	126	38
Tor Ghar	26	74	142	41	56	12
Upper Dir	99	423	268	200	83	62

Max .
Min .

Note: Utilisation rate was calculated as a total number of admissions per 100,000 of the covered population. Due to the lack of data on the exact number of people enrolled, we used the population census of 2017, extrapolated to 2020, to determine the number of people covered. We, however, recommend Exposure—the total length of time members has been enrolled in the programme—for a more accurate and meaningful calculation of utilisation rate.

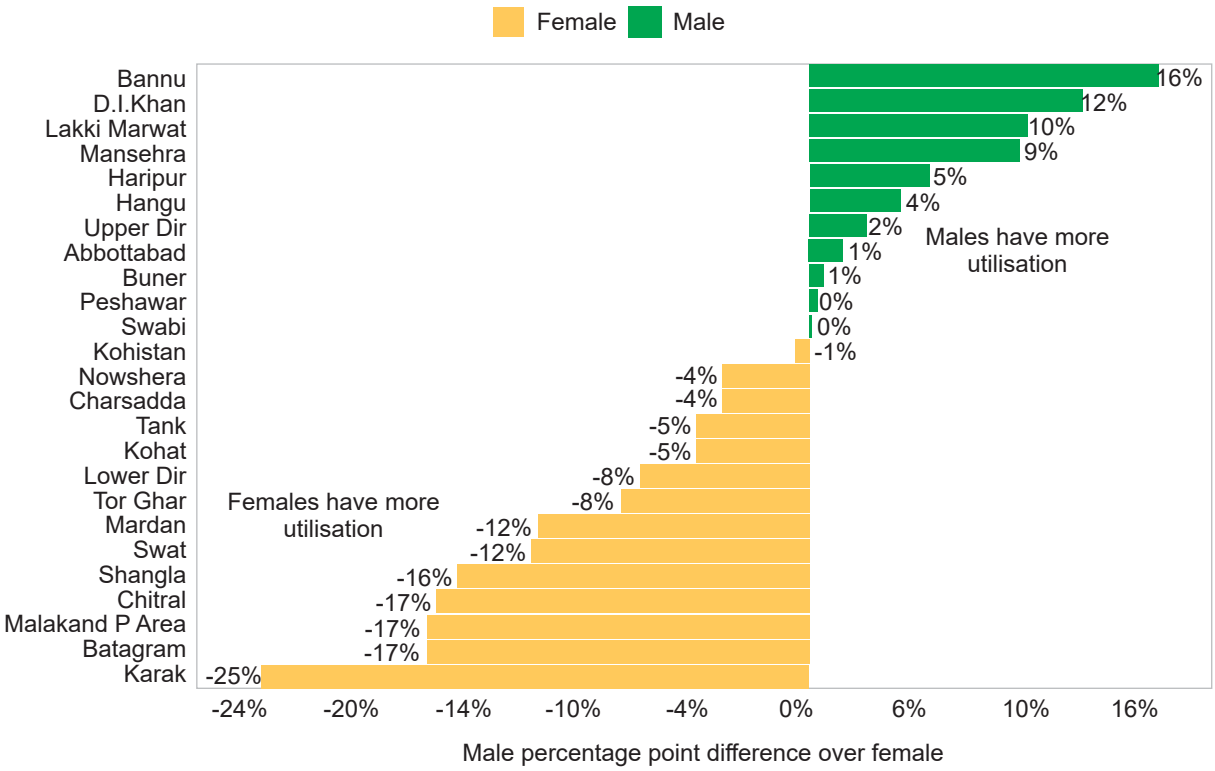
Figure 24 Utilisation rates for selected line of treatments (per 100,000 population)



4.5.5. Geographical variability with gender gradient

A gender gradient in the geographical distribution was also noted. Figure 25 shows the male percentage-point difference over females in admissions across districts. Peshawar and Swabi, the difference in utilisation by gender in percentage-points was almost zero. However, on the one extreme, the utilisation of the services by men in Bannu, D.I. Khan, and Lakki Marwat outweighs the utilisation by women by more than 10 percentage-points, while the utilisation by women in Karak, Battagram, and Malakand far outweighs the utilisation by men by as much as 25 percentage points.

Figure 25 Percentage point difference in male and female utilisation by district

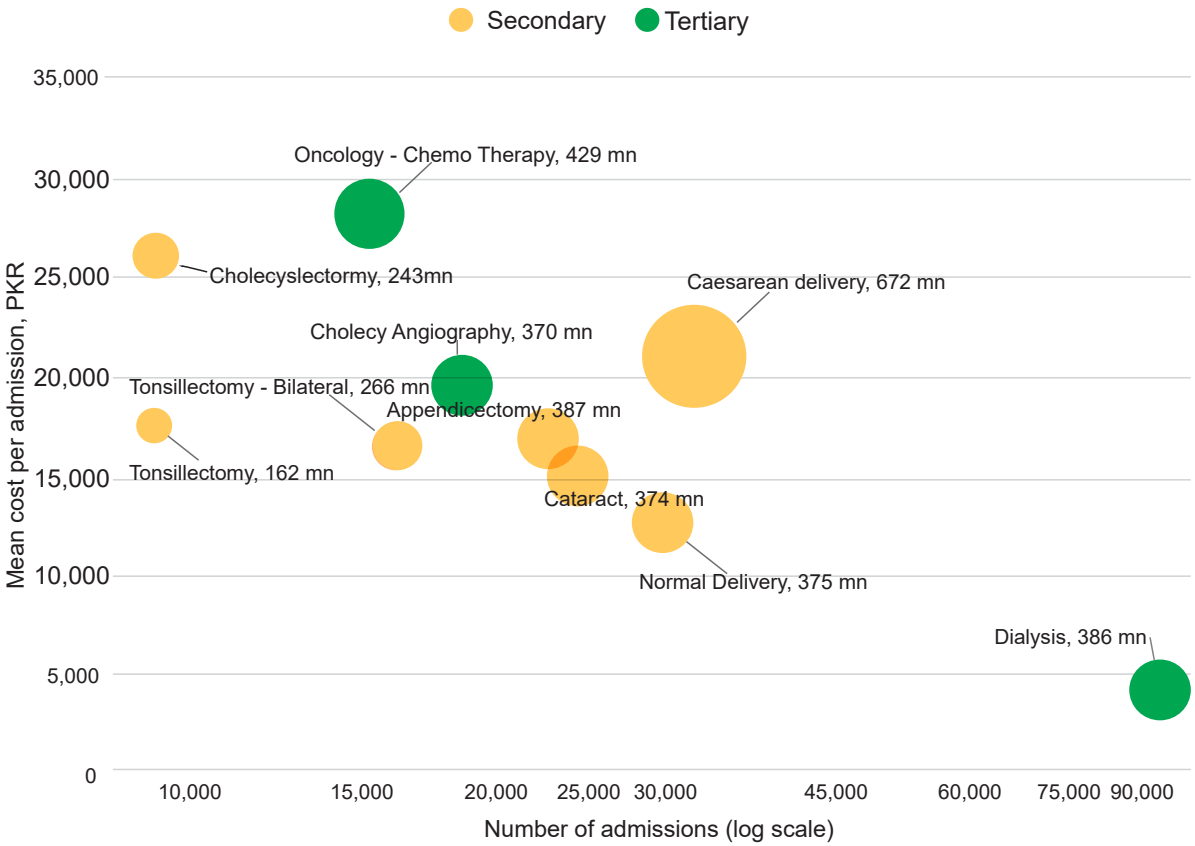


4.6. Utilisation stratified by the cost of care

4.6.1. Mean and aggregate cost for 10 most frequent treatments

Figure 26 displays the mean and aggregate costs of 10 most frequent treatments, where the x-axis shows the frequency and the y-axis shows the mean cost per admission of a particular treatment. The size of the bubble commensurates with the aggregate cost, in million (mn) PKR.

Figure 26 Mean cost, number of admissions and aggregate cost for ten most frequent treatments

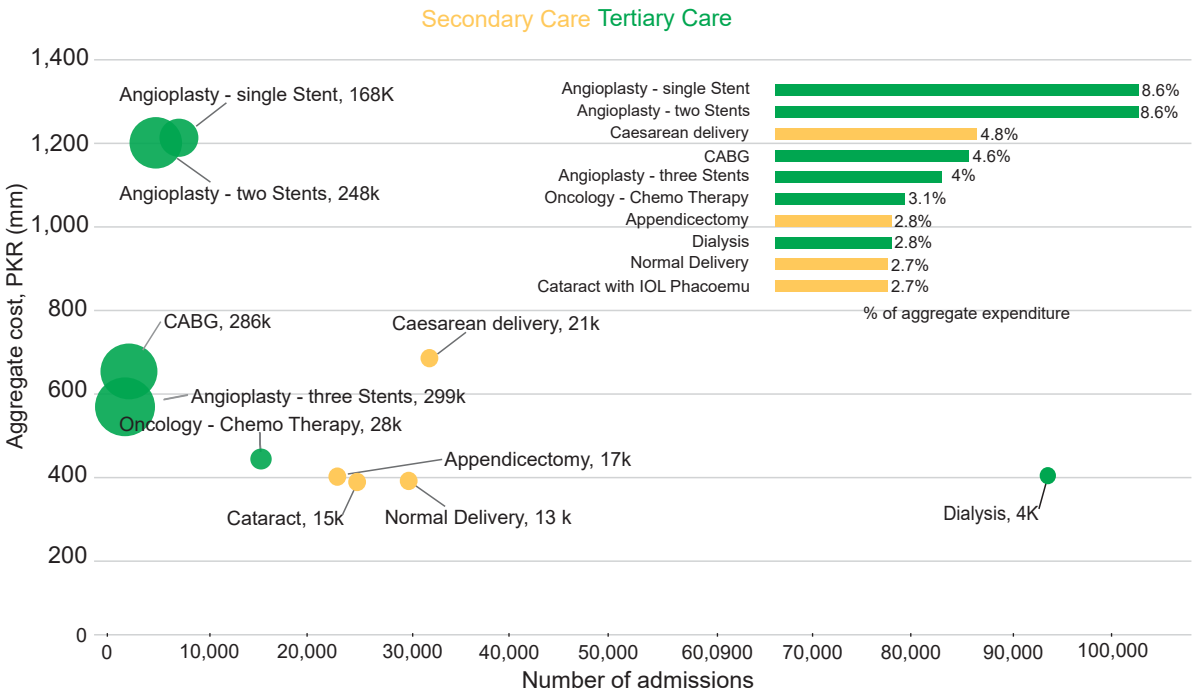


Of the 10 treatments, three belonged to tertiary care, while the rest belonged to secondary care. The biggest bubble is for Caesarean deliveries, where more than 30 thousand admissions at an average cost of around 21 thousand PKR incurred a total cost of PKR 672 million in one year. The second biggest bubble is for oncology, where the number of admissions was fewer, but each incident's cost was considerably higher. Dialysis had more than 90,000 admissions making the bubble appear in the extreme right corner, but with the mean cost below PKR 5,000 incurring a total expense of PKR 386 million in the year, the bubble size remains moderate.

4.6.2. Aggregate cost and mean cost for ten treatments with the highest aggregate cost

Figure 27 shows the aggregate cost, number of admissions and means cost for the top treatments that have incurred the highest aggregate expenditure. Aggregate cost (in millions) and admissions are on the y-axis and x-axis, respectively. The mean cost is provided next to the treatment name and determines the size of the bubble. A sub bar chart in Figure 27 shows the percentage share of a treatment in aggregate expenditure on all treatments.

Figure 27 Aggregate cost, number of admissions and mean cost for ten treatments with highest aggregate expenditure

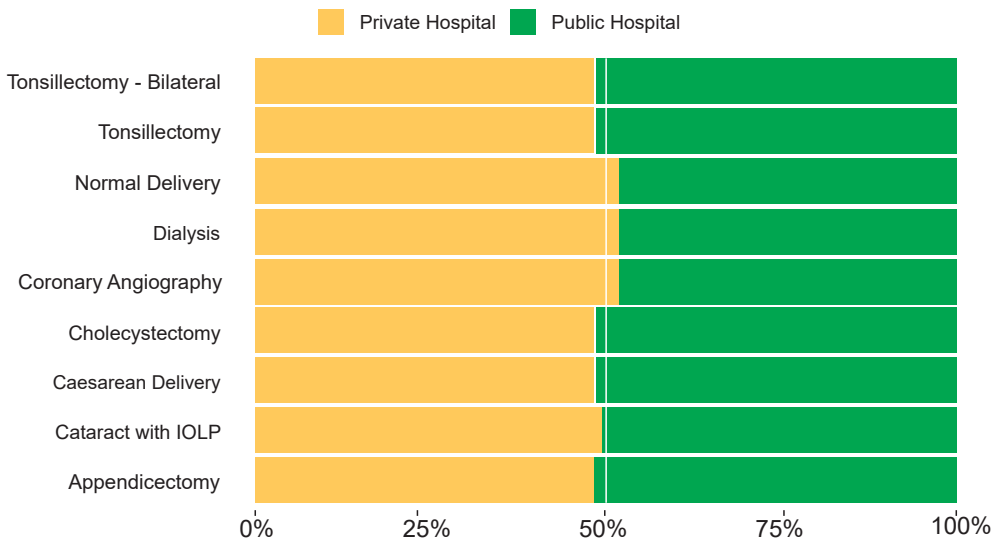


Angioplasty (single and double stents) had the highest aggregate cost among all treatments and constituted 17.3% of all costs. The third most costed treatment was Caesarean delivery, followed by CABG.

4.6.3. The mean cost difference by type of service providers

The mean cost difference for care in the public and private sectors was negligible. The means cost differences were calculated using aggregate cost, the number of admissions, line of treatment, and the hospital type. There were no significant differences in the pricing for public or private hospitals, indicating that the cost is almost the same in both sectors for these selected treatments. Some minor mean cost differences were noted (see Figure 28), where the service pricings were high for the private sector (dialysis and coronary angiography) than the mean value for the public and private sectors combined. In other instances, the public sector prices were slightly higher than the mean cost for both sectors combined.

Figure 28 Mean cost difference by frequent treatments and type of providers



5. CONCLUSION

The first year of universal coverage has enhanced hospital admissions manifold. Admissions in almost all specialties have increased. The programme has facilitated more than 90 thousand dialysis sessions in one year, and many women had institution-based deliveries due to the Sehat Card coverage. The programme also facilitated thousands of life-saving cardiac procedures. At the same time, thousands of surgeries were performed under the programme, especially in the young and productive age groups. This will enable major breadwinners of the families to be economically productive.