ORIGINAL ARTICLE

Assessing readiness of health facilities for implementing a social health insurance programme in Khyber Pakhtunkhwa, Pakistan

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Abstract

Objective: To assess the readiness of empanelled health facilities, encompassing secondary and tertiary care hospitals under the SCP Programme, to effectively implement the benefits package.

Method: A cross-sectional survey was conducted in 38 public and private hospitals providing services under the SCP Programme across 10 districts of KP. The study utilized a Health Facility Assessment tool adapted from WHO's Service Availability Readiness Assessment and other frameworks. The readiness was measured across 8 domains including Infrastructure, Governance, Health Information System, Infection Control, Sehat Card desk services, Billing & Reimbursement, Clinical Services, and Clinical Support Services. Data was collected from October 2022 to February 2023.

Results: Based on our assessment, tertiary hospitals generally demonstrated a higher level of readiness compared to secondary hospitals across various domains. Tertiary hospitals demonstrated better readiness for access and infrastructure (92%), governance and leadership (97%) and infection prevention (79%). Secondary hospitals showed lower readiness scores in areas like HMIS (65%), billing & reimbursements (75%), and infection control (64%). The tertiary facilities outperformed secondary ones in clinical and support services, including emergency rooms, intensive care, surgery, obstetrics, laboratory services, blood banks, radiology, and pharmaceutical services. The overall preparedness was significantly higher in urban, relative to rural, hospitals across most indicators.

Conclusion: The study underscores the need for targeted capacity building in KP's health facilities, particularly secondary and remote hospitals. These improvements are crucial for successful implementation and expansion of the SCP programme.

Keywords: Health Facility Readiness, Social Health Insurance, Sehat Card Plus Programme, Khyber Pakhtunkhwa, Health Services Evaluation. (JPMA 74: S-22 [Suppl. 11]; 2024) **DOI: https://doi.org/10.47391/JPMA.SCPP-04**

Introduction

Over the past two decades, many low- and middle-income countries (L&MICs) have included Universal Health Coverage (UHC) schemes including social health insurance as part of their National Health Policy.[1,2] However, they are faced with a myriad of challenges that relate to getting sustained political commitment, defining a cost-effective service package, providing coverage to the poor segments of the population, and maintaining the quality of healthcare service delivery. Efforts to improve UHC coverage and quality are of paramount importance in countries where disease burdens are high and health outcomes are poor. While multiple studies have provided insights on UHC-system design and the utilization of care,[3] there is limited research on health facilities' capacity to deliver essential services under UHC schemes.[4]

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Service readiness, a key component of structural care quality within the Donabedian Framework, is crucial for providing high-quality care at hospitals.[5] While the general service readiness index is increasingly being used in subnational or national assessments and has also been adapted for disease-specific studies, few studies have explored the service readiness of health facilities in the context of publicly funded social health insurance schemes.[6,7] Health facility readiness involves the cumulative availability of various components required to provide services–infrastructure/amenities, basic supplies/equipment, standard precautions, laboratory tests, medicines and commodities, and health professionals.[7] Additionally, the capacity to process claims has emerged as a vital skill in implementing health insurance schemes.[8]

Pakistan is an LMIC with a GDP per capita of US$ 1,538 in 2021.[9] Government spending on health at 1% of its GDP is inadequate to accommodate the health needs of the population.[10] Over the last three decades, Pakistan has fallen behind its South Asian counterparts in improving the health outcomes of its population. For example, Pakistan

has one of the highest rates of maternal and child mortality globally.[11]

As a step towards achieving UHC, the Sehat Sahulat Programme, later renamed as Sehat Card Plus Programme (SCP), was launched in 2015 as the Khyber Pakhtunkhwa's (KP) government's flagship publicly funded the health insurance programme. This programme facilitates cashless, inpatient care at empanelled public and private hospitals through a Sehat Card for beneficiary families.

Since the SCP's introduction, utilization of health services under this Programme has risen significantly in KP, with expectations for its expansion to encompass the entire population.[12] However, this surge may strain healthcare workers and the hospital infrastructure. With the legislation on health insurance (KP Universal Health Coverage Act 2022), and expansion of coverage under the SCP Programme, empanellment of hospitals has become imperative to sustain both clientele and profitability of private hospitals. This dynamic has stimulated the growth of the private hospital market and incentivized public facilities to provide a better quality of care for empanellment eligibility.[13] This study provides evidence on how a representative sample of public and private empanelled hospitals from across the province have responded to the increased demand for health care services under the SCP Programme.

The primary purpose of this study was to comprehensively assess the readiness of the impanelled health facilities – both the secondary and tertiary care hospitals under the SCP Programme to appropriately implement the package of health services, meet the quality of care standards, have the managerial capacity, and meet expectations of the insured population. This study forms part of a larger evaluation of the Programme carried out by the Aga Khan University (AKU) between October and December 2022. It is hoped that the information and recommendations will better inform policymakers regarding the development of programmes and policies which address the state of preparedness at all empanelled public and private sector health institutions in KP.

Methods

This cross-sectional study was conducted at 38 empanelled public and private hospitals providing services under the SCP Programme across 10 districts in KP province, in northwestern Pakistan, with a population of 35.53 million.[14] The province is administratively spread over 38 districts and 986 union councils (UCs).[15] The selection of districts for the study was adapted from a previous study[16] and included Peshawar, Kohat, Swabi, Dir Upper, DI Khan, Malakand, Chitral, Bannu, Abbottabad, and Swat.

For the 10 districts of KP included in the assessment, a master list of all empanelled hospitals as of September 2022, was obtained from the State Life Insurance Corporation (SLIC) and used as the sampling frame for the survey. The list included a total of 109 health facilities with a mix of secondary and tertiary care hospitals from the public and for-profit private sectors. Stratified, proportionate sampling was done to select 40 facilities from the list for evaluation. Two facilities refused to participate, while 38 facilities took part in the survey and formed the final sample.

Table 1 provides the breakdown of these facilities by ownership and level of secondary or tertiary care and Table 2 lists the names of all included facilities.

The Health Facility3Assessment tool was adapted from the WHO Service Availability, Readiness Assessment (SARA),[17] Harmonized Health Facility Assessment (HHFA)[18] and WHO's general service readiness index for evaluating hospitals. The tool was further contextualised for the SCP Programme by matching it with the Empanellment Checklist Tool used by SLIC, the main insurance underwriters, and selecting tracer clinical and clinical support services for the assessment of healthcare facilities included in the SCP benefits package. The tool was also reviewed by health systems and medical service experts of relevant clinical services at AKU.

Tracer items were employed to generate domain-wise scores, which were then summed to calculate a composite Health Facility Readiness Score for all SCP Programme empanelled hospitals. This score was calculated based on unweighted tracer indicators under 8 domains: Access &

Table-1: Ownership and Level of Care Provided by Sampled Facilities in KP, Pakistan.

	Public n (%)	**Private** n (%)	**Total** n (%)
Secondary	10 (26)	16 (42)	26 (68)
Tertiary	4(11)	8 (21)	12 (32)
Total	14 (37)	24 (63)	38 (100)

Table-2: Domains, number of indicators, and maximum achievable scores for health facility assessment.

	Domain	**Number of Indicators**
	Systems and Structures	
1	Access & Infrastructure	12
2	Governance & Management	6
3	Health Management Information System	4
4	Infection Prevention & control	7
5	*Sehat Card Desk Services*	4
6	Billing & Reimbursement	10
	Clinical & Clinical Support Services	
7	Clinical Services	99
8	Clinical Support Services	78
	Total	220

Infrastructure, Governance & Management, Health Management Information System, Infection Prevention and Control, Sehat Card desk services, Billing & Reimbursement, Clinical Services, and Clinical Support Services (for details, see section Survey Instrument).

The readiness of empanelled hospitals to provide clinical services to Sehat Card users was assessed for the four most utilized services. These included Accident & Emergency, Intensive and Critical Care Services, General Surgery, and Obstetrics and Gynaecology. Concurrently, the readiness to provide clinical support services was also assessed for four essential services i.e., Laboratory and Diagnostics Services, Blood Bank services, Radiological and Imaging services, and Medicines and Pharmaceutical services.

The study was initiated in August 2022 and completed in August 2023. Data was collected from October 2022 to February 2023, after obtaining the necessary permissions from the Department of Health, KP. A written (signed) consent was obtained from the hospital leadership including medical superintendents and facility managers to conduct health facility assessments. The inclusion criteria included these cadres who have been affiliated with the facilities for 1 year. Data collection was carried out over two to three days at each facility, depending on the size of the hospital and the availability of administrative staff. Data was collected electronically using the survey App Zoho, installed on digital tablets. Data collectors were trained in a 5-day training workshop prior to initiation of process. The study covered only 10 districts in KP, had the potential to introduce the geographical bias therefore to mitigate it, a strategic selection based on the UNDP Human Development Index, ensuring each cluster included both a district with a high HDI score and one with a low HDI score.

Each domain of the health facility readiness tool carried key tracer indicators that were scored as 1 for "present" and 0 for "absent" at each facility. All the scores were summed domain-wise to arrive at a Total Readiness Score for each facility (see Tables 3 & 4 in the Appendix). Simple descriptive statistics (frequencies, mean, minimum, and maximum values) were used to analyse the survey. All data was analysed using MS Excel and Stata (v 13) software.

The ethical approval for this study was obtained from the Ethical Review Committee (ERC) at AKU and the National Bioethics Committee (NBC), Pakistan.

Results

Hospital Readiness – Infrastructure and Systems: For all domains of structure and systems, under assessment, the tertiary hospitals were found to have a higher level of readiness (Figure 1). Out of 26 empanelled secondary hospitals, 23 (88%) and out of 12 empanelled tertiary

Table-3: Readiness of SCP-empanelled hospitals on key access and infrastructure indicators by level of facility, between Oct to Dec 2022, in KP, Pakistan.

Indicators	Secondary Hospitals (n=26) n (%)	Tertiary Hospitals (n=12) n (%)
Hospital is accessible through public transport (Less than 5-minute walk from closest public transport point)	22 (85)	9 (75)
Hospital entrance is wheelchair/ stretcher accessible	26 (100)	12 (100)
Hospital has wheelchairs and stretchers available	26 (100)	12 (100)
Hospital has a functional phone	25 (96)	12 (100)
Hospital has functional Internet device	25 (96)	12 (100)
Hospital has power supply at the time of assessment	25 (96)	12 (100)
Hospital has power supply backup	26 (100)	12 (100)
Hospital has appropriate water supply for general use	26 (100)	11 (92)
Hospital has a filtered water supply on each floor for drinking purposes	17 (65)	10 (83)
Hospital has its own ambulance service	9 (35)	7 (58)
Hospital has functional toilets for patients	26 (100)	12 (100)
Hospital has a functional Firefighting system	21 (81)	12 (100)
Average Access and Infrastructure Readiness Score %	(88)	(92)
**Maximum Score: 312 for secondary hospitals and 144 for tertiary hospitals*		
Hospital Readiness on Key Governance and management indicators- by level of facility		
Hospital has designated staff members responsible for hospital management	26 (100)	12 (100)
Hospital has policies, guidelines and SOPs for all departments and supporting services	23 (88)	11 (92)
Hospital management has regular meetings with State Life representative	22 (85)	12 (100)
Hospital carries out formal case reviews for patient outcomes	18 (69)	12 (100)
Hospital has a system for identifying and monitoring adverse events such as patient falls, hospital acquired infections	14 (54)	11 (92)
Hospital has a focal person to address patient's complaints	21 (81)	12 (100)
Average Governance and Management Readiness Score %	(79)	(97)
**Maximum Score: 156 for secondary hospitals and 72 for tertiary hospitals*		
Hospital Readiness on Key Billing & Reimbursement Indicators- by level of facility		
Written Sehat Card policy guidelines for processing claims received at the hospital	23 (88)	12 (100)
List of conditions included and reimbursable by SCP Program available at hospital	25 (96)	12 (100)
Policy document available with the hospital has timelines and durations for payment cycle mentioned	15 (58)	10 (83)
Hospital manager/nominated staff provided training on Sehat Card Package and Reimbursement policy by State Life	15 (58)	9 (75)
Designated hospital staff provided training on Sehat Card package and reimbursement policy by the hospital leadership/SLIC	14 (54)	6 (50)
Hospital uses standard medical claim form issued by SLIC	24 (92)	10 (83)
Hospital has at least one functional computer dedicated to claims processing	26 (100)	12 (100)
Hospital has at least one dedicated staff for preparing claims	26 (100)	12 (100)
Hospital uses the online claims submission system	5 (19)	3 (25)
Hospital is reimbursed by the State Life/Government in a timely manner	22 (85)	9 (75)
Average Readiness Score %	(75)	(79)
Readiness on Infection Control and Waste Management Indicators- by level of facility		
Hospital has Infection Prevention and Control (IPC) Guidelines	20 (77)	11 (92)
Hospital has a technical IPC Committee	15 (58)	9 (75)
Hospital conducted an IPC assessment within 1 past month from the day of visit	5 (19)	3 (25)
Hospital has guidelines on medical waste management	23 (88)	10 (83)
Hospital disposes of sharps waste through an incinerator (in-house/outsourced)	16 (62)	11 (92)
Hospital disposes of infectious waste through an incinerator (in-house/ outsourced)	16 (62)	11 (92)
Waste observed at the hospital was properly contained in clearly labeled waste containers	21 (81)	11 (92)
Average Readiness Score %	(64)	(79)
**Maximum Score: 182 for secondary hospitals and 84 for tertiary hospitals*		
Hospital Readiness on Key HMIS and Data Quality indicators- by level of facility		
Agreement between medical records and claims	(95)	(98)
Completeness of data in medical records	(98)	(99)
Use of icd-10 as standard for coding for medical conditions	9 (35)	6 (50)
Use of standardized set of digital data entry forms	17 (65)	11 (92)
Use of standardized set of paper data entry forms	22 (85)	11 (92)
Use of unique patient ids for inpatients	20 (77)	12 (100)
Average HMIS and Data Quality Readiness Score %	(65)	(83)
Hospital Readiness on key Sehat Card Desk indicators- by level of facility		
Hospital has dedicated Sehat card desk	25 (96)	12 (100)
Hospital's entrance has directions to the Sehat card desk	21 (81)	12 (100)
Timings of the Sehat card desk mentioned at the desk	22 (85)	12 (100)
Health facilitation officer present Mon-Sat during official designated hours	26 (100)	12 (100)
Average Sehat Card Desk Readiness Score %	(91)	(100)

hospitals, 11 (92%) scored on access and infrastructure indicators, respectively, while for Governance and Management, tertiary hospitals scored 17% higher than secondary hospitals. For secondary hospitals, the HMIS readiness score was 65%, while for readiness to manage billing and reimbursements, it was 75%. And for infection prevention and control the readiness score was 64% for secondary whereas for tertiary hospitals it was 79%.

At least 22 out of 26 (85%) of secondary hospitals and 9 out of 12 (75%) of tertiary hospitals were located less than a 5-minute walk from the closest public transport access point.

Only 9 out of the 26 secondary facilities (35%) had their self-managed ambulance service as compared to 7 out of 12 tertiary facilities (58%). All hospitals included in the assessment had wheelchairs and stretchers available for patient use. In terms of amenities, drinking water availability for patients was present in 17 (65%) and 10 (83%) of secondary and tertiary hospitals, respectively. All assessed facilities had an alternate/backup power supply as shown in Table 3.

All empanelled hospitals assessed had designated senior leaders to oversee the management of hospitals. Almost 4

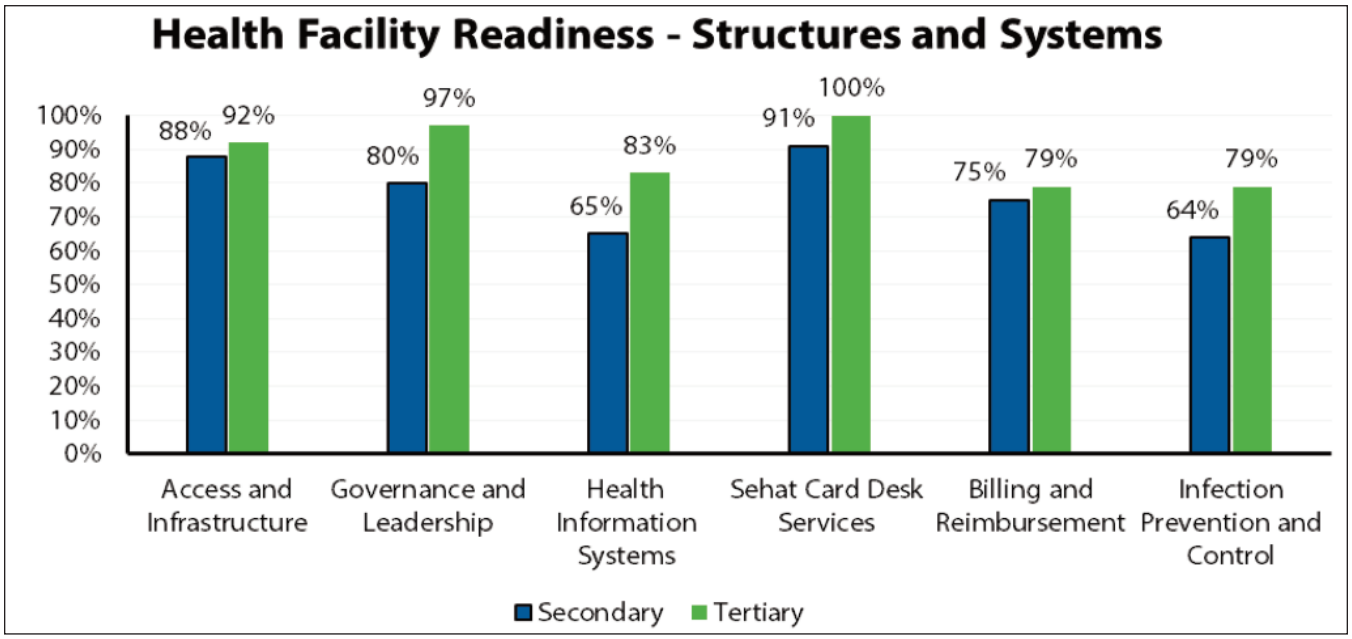

Figure-1: Health Facility Readiness – Structure and Systems, by level of facility.

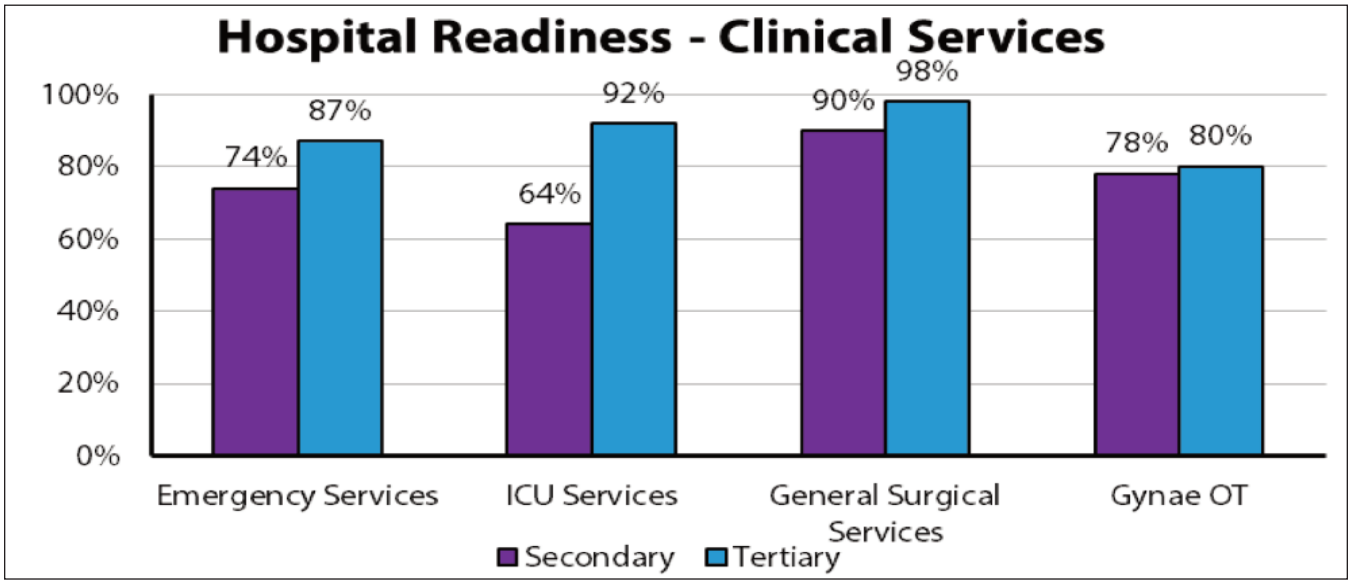

Figure-2: Hospital Readiness on Clinical Services- by the level of facility.

(15%) secondary hospitals reported not having regular meetings with the SLIC representatives. Among 26 secondary hospitals, 18 (69%) reported carrying out formal case reviews for patient outcomes, whereas 14 (54%) indicated having a system to identify and monitor adverse events such as patient falls, hospital-acquired infections, etc.

The assessment demonstrated that only 9 (35%) secondary, and 6 (50%) tertiary facilities used International Classification of Diseases Version 10 (ICD-10) as a standardized system for coding medical conditions. Individual patient records with unique identifiers were maintained at all tertiary care facilities and 20 (77%) secondary facilities. Overall completeness of data elements at secondary hospitals was 98%, with 95% uniformity among the three types of records, i.e., patients' folders, discharge summaries, and claim forms. Standardized data entry forms were available at 11 out of 12 (92%) tertiary hospitals, whereas digital and paper-based standardized forms were available at 17 (65%) and 9 (35%) of secondary facilities, respectively.

Of the 26 secondary hospitals assessed, 3 reported not having received written Sehat Card Policy guidelines for processing claims. Additionally, 11 (42%) of secondary and 3 (25%) of tertiary hospitals reportedly received no training on the Sehat Card Package and Reimbursement Policy by SLIC. At the time of assessment, only 5 (19%) secondary and 3 (25%) tertiary hospitals were using the e-claims/online claims submission system. A total of 22 (84.6%) secondary and 9 (75.0%) tertiary facilities reported receiving timely reimbursements from SLIC. Incomplete documentation was cited as the most common reason for delay in reimbursements.

For infection control, 20 out of 26 (77%) secondary and 11 out of 12 (92%) tertiary hospitals had available hospital guidelines on infection control. A technical Infection Prevention and Control (IPC) committee was established in 15 (58%) secondary and 9 (75%) tertiary hospitals. However, formal IPC assessments were conducted at only 5 (19%) secondary and 3 (25%) of tertiary facilities. The disposal of sharp and infectious waste through proper incineration was not practiced at 10 (38%) secondary and 01 (8%) tertiary facilities.

All the surveyed hospitals had a dedicated Sehat Card desk present on the premises. However, five secondary hospitals lacked clear directions from the entrance to the Sehat Card desk, and 4 did not specify the desk's operational times. The Health Facilitation Officers (HFOs), acting as Sehat Card representatives, were present during designated duty days and timings at all the hospitals. The cumulative readiness to provide Sehat Card Desk services was 90% for secondary and 100% for tertiary hospitals.

Hospital Readiness–Clinical and Clinical Support Services

Clinical Services: Tertiary care hospitals exhibited higher

Table-4: Hospital Readiness on Clinical and Clinical Support Services – by level of facility.

Tracer Indicators	Secondary Hospitals (n=26) n (%)	Tertiary Hospitals (n=12) n (%)
Accident & Emergency		
Infrastructure (availability of ER Room/Department)	23 (83)	12 (100)
Readiness - Infrastructure %	75 (78)	46 (96)
Human Resources	80 (83)	44 (100)
Treatment Guidelines	27 (56)	17 (71)
Readiness-Guidelines	12 (50)	8 (73)
Standard Precautions for Infection Prevention and Control	94 (78)	55 (92)
Equipment	170 (71)	99 (83)
Composite Readiness to provide Emergency Services-%	446 (74)	261 (87)
**Maximum Score: 600 for secondary hospitals and 300 for tertiary hospitals*		
ICU and Critical Care		
Infrastructure (Availability of ICU)	109 (65)	81 (96)
Human Resources	95 (66)	69 (96)
Guidelines	10 (59)	9 (75)
Standard Precautions for Infection Prevention and Control	81 (68)	59 (98)
Equipment Items	154 (64)	112 (93)
Composite Readiness to provide ICU Services-%	449 (64)	330 (92)
**Maximum Score: 696 for secondary hospitals and 348 for tertiary hospitals*		
General Surgery		
Infrastructure	89 (93)	48 (100)
Human Resources	92 (96)	48 (100)
Guidelines	15 (63)	9 (75)
Standard Precautions for Infection Prevention and Control	135 (94)	72 (100)
Equipment	207 (86)	118 (98)
Composite Readiness to provide General Surgical Services-%	538 (90)	295 (98)
**Maximum Score: 576 for secondary hospitals and 288 for tertiary hospitals*		
Gynaecology & Obstetrics		
Infrastructure	58 (81)	30 (83)
Human Resources	100 (83)	50 (83)
Guidelines	15 (63)	6 (50)
Standard Precautions for Infection Prevention and Control	99 (83)	50 (83)
Tracer Equipment Items	180 (75)	95 (79)
Composite Readiness to Provide Gynae OT Services %	452 (78)	231 (80)
**Maximum Score: 576 for secondary hospitals and 288 for tertiary hospitals*		
Laboratory and Diagnostics		
Infrastructure	**166 (83)**	**91 (95)**
Human Resources	**20 (80)**	**12 (100)**
Availability of Tracer Laboratory Tests	**361 (80)**	**190 (88)**
Composite Readiness to provide Laboratory Services-%	547 (81)	293 (90)
**Maximum Score: 675 for secondary hospitals and 324 for tertiary hospitals*		
Blood Bank		
Infrastructure (incl. Availability of blood bank)	**152 (55)**	**106 (96)**
Human Resources	**25 (50)**	**20 (83)**
Availability of procedures for screening and cross-matching of blood products	**3 (64)**	**20 (83)**
Composite Readiness to provide Blood Banking Services-%	**209 (56)**	**146 (81)**
**Maximum Score: 375 for secondary hospitals and 180 for tertiary hospitals*		
Radiology & Imaging		
Infrastructure	104 (66)	56 (93)
Human Resources	19 (76)	11 (92)
Availability of Tracer Radiological and Imaging tests	98 (56)	58 (69)
Composite Readiness to provide Radiology and Imaging Services-%	221 (62)	125 (80)
****Maximum Score: 325 for secondary hospitals and 156 for tertiary hospitals***		
Pharmacy		
Infrastructure	**159 (91)**	**84 (100)**
Human Resources	**21 (84)**	**10 (83)**
Management of expired products	**41 (82)**	**23 (96)**
Availability of WHO 14 Essential Medicines	**294 (84)**	**160 (95)**
Composite Readiness to Provide Pharmacy Services %	515 (86)	277 (96)
**Maximum Score: 600 for secondary hospitals and 288 for tertiary hospitals*		

readiness levels than secondary hospitals across the four categories of clinical services assessed. Figure 2 provides a summary of the readiness score of the 38 hospitals assessed for each of the four clinical areas. For more detailed information on each indicator assessed for the different domains of readiness, please refer to Table 4.

Overall, most secondary and tertiary hospitals had well-equipped Emergency Rooms (ER). However, 4 out of the 26 secondary hospitals (15%) lacked an ER, with 8 (29%) of secondary and 2 (17%) of tertiary hospitals having deficient ER equipment. Furthermore, standardized treatment guidelines were absent in the ER of 11 out of 26 (44%) secondary and 4 out of 12 (29%) tertiary facilities. The cumulative readiness rate for Emergency and Accident Services was 74% for secondary and 87% for tertiary facilities.

Intensive Care Units were available in 17 out of 24 secondary hospitals and all 12 tertiary hospitals. While 15 (59%) secondary and 9 (75%) tertiary hospitals used standardized guidelines for the clinical care of critically ill patients, one secondary hospital had a completely non-functional ICU. The cumulative readiness for intensive and critical care services was measured to be 65% and 92% for secondary and tertiary facilities respectively.

For General Surgery, operating rooms (OR) were available and functional with qualified surgeons and staff in 23 out of 26 secondary and all 12 tertiary hospitals. Post-Op recovery rooms were lacking in 2 secondary facilities. Essential equipment, such as defibrillators and electric autoclaves were deficient in 8 (29%) and 4 (33%) secondary and tertiary facilities, respectively.

A fully functional Obstetrics & Gynaecology (OBS/GYN) OR was found in 20 (83%) secondary hospitals and 10 (83%) tertiary hospitals. All included hospitals had the required human resources for carrying out newborn deliveries, including C-sections. Guidelines for safe childbirth and maternal/newborn care were more prevalent in secondary facilities. Functional incubators were found in 16 (63%) secondary and 8 (67%) tertiary facilities. The cumulative readiness for OBS/GYN services was estimated at 78% and 80% for secondary and tertiary facilities, respectively.

Clinical Support Services: The readiness for clinical support services was assessed for four essential services i.e. Laboratory and Diagnostics Services, Blood Bank services,

Radiological and Imaging services, Medicines and Pharmaceutical services.

Figure 3 provides a summary of the readiness score of the 38 hospitals assessed in the 10 study districts for each of the four clinical support areas assessed. For more detailed information on each indicator assessed for the different domains of readiness, please refer to Table 4.

Urban hospitals demonstrated significantly higher readiness for blood bank services, with 24 out of 34 (70%) fully equipped, while rural hospitals had only 1 out of 4 (25%) with any level of readiness, leading to an overall readiness score of 70% for urban hospitals and just 15% for rural hospitals, highlighting the critical need for improved blood banking facilities in rural areas. In Lab and Diagnostics, both rural hospitals 3 out of 4 (75%) and urban hospitals 33 out of 34 (97%) exhibited high readiness rates, with overall readiness scores of 79% and 84%, respectively, indicating comparable availability of services in both settings. 33 (97%) Urban hospitals had a higher readiness rate at 72% compared to 56% in all rural hospitals for Radiology and Imaging, highlighting the need for investment and improvement in rural hospitals for equitable access to services provided under Sehat Card. In

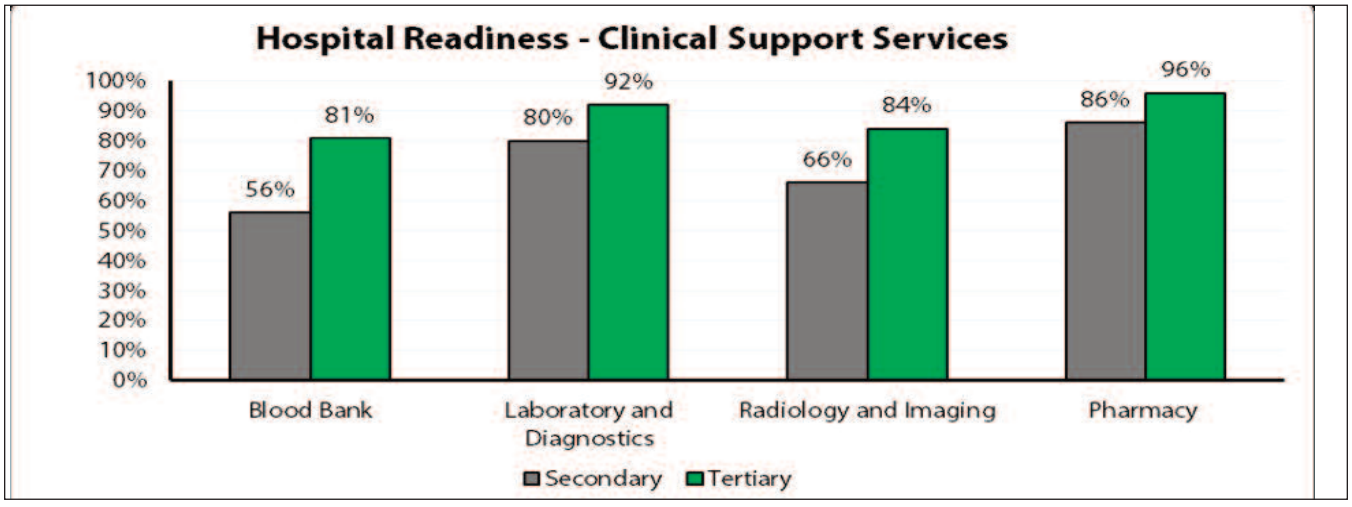

Figure-3: Hospital Readiness on Clinical Support Services- by level of facility.

the Pharmacy domain, both 33 (97%) urban and all rural hospitals showed high readiness rates of 90 and 94% respectively.

Readiness for laboratory services was measured at 21 (81%) in secondary and 11 (90%) in tertiary hospitals. Only 21 out of 26 (80%) secondary hospital laboratories were supervised by a qualified pathologist with a postgraduate qualification. Electronic records of laboratory investigations were present in 14 (52%) secondary and 10 (83%) of tertiary hospitals. The availability of 18 tracer diagnostic tests was scored to be 361 80% and 190 (89%) at secondary and tertiary facilities, respectively.

The blood bank readiness score was 209 (56%) in 26 secondary hospitals, which is lower compared to 146 (81%) in 12 tertiary hospitals. A total of 17 out of 25 secondary and 10 out of 12 tertiary facilities had functional blood banks, but only 8 secondary and 10 tertiary hospitals were headed by a qualified pathologist. Deficiencies of

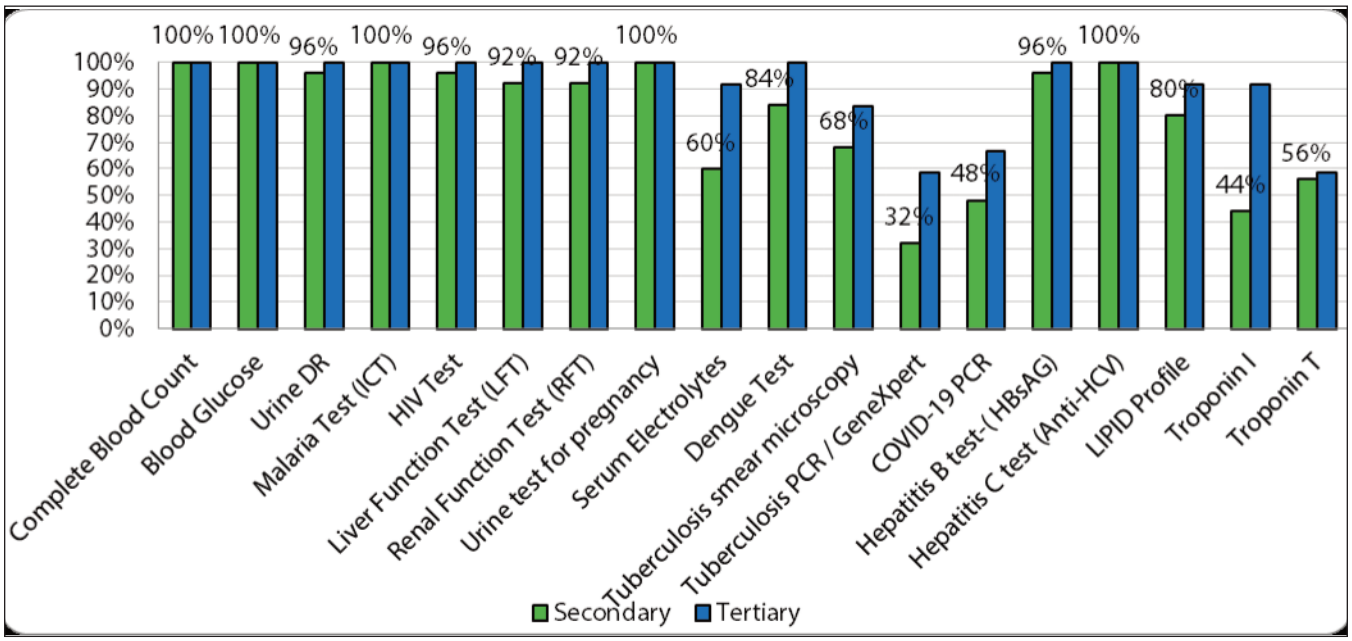

Figure-4: Availability of Essential Laboratory Tests in Secondary and Tertiary Hospitals.

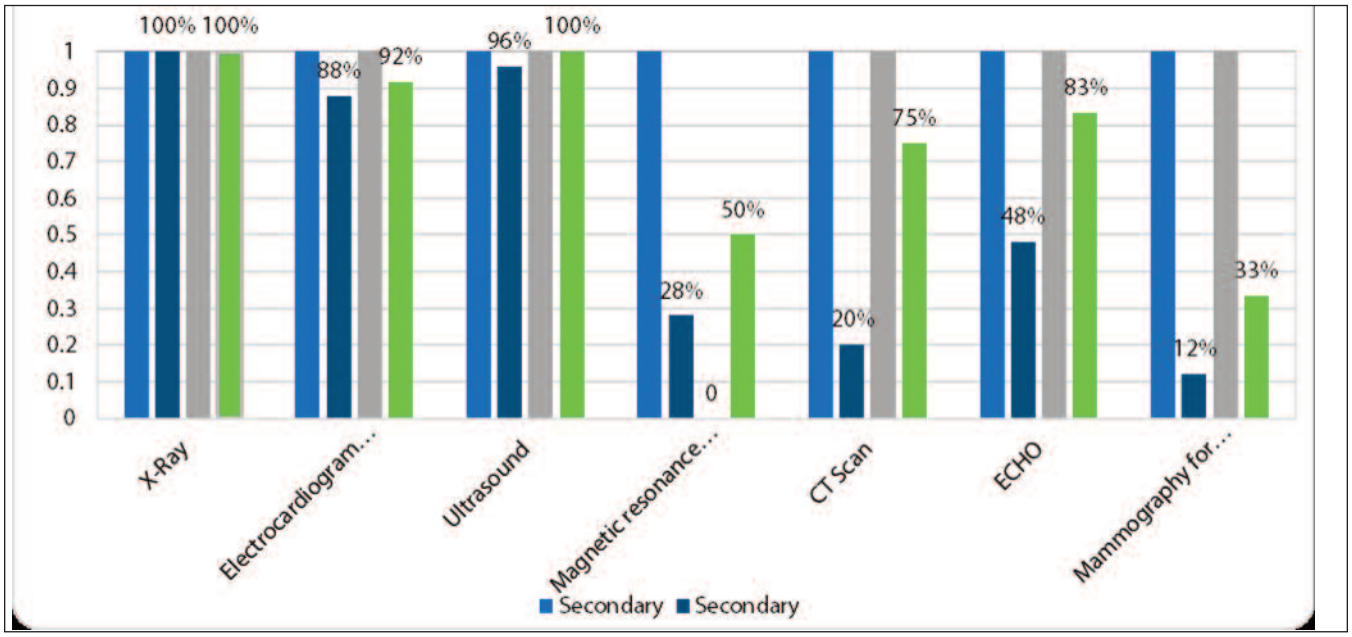

Figure-5: Availability of Radiological and Imaging services at Secondary and Tertiary Hospitals.

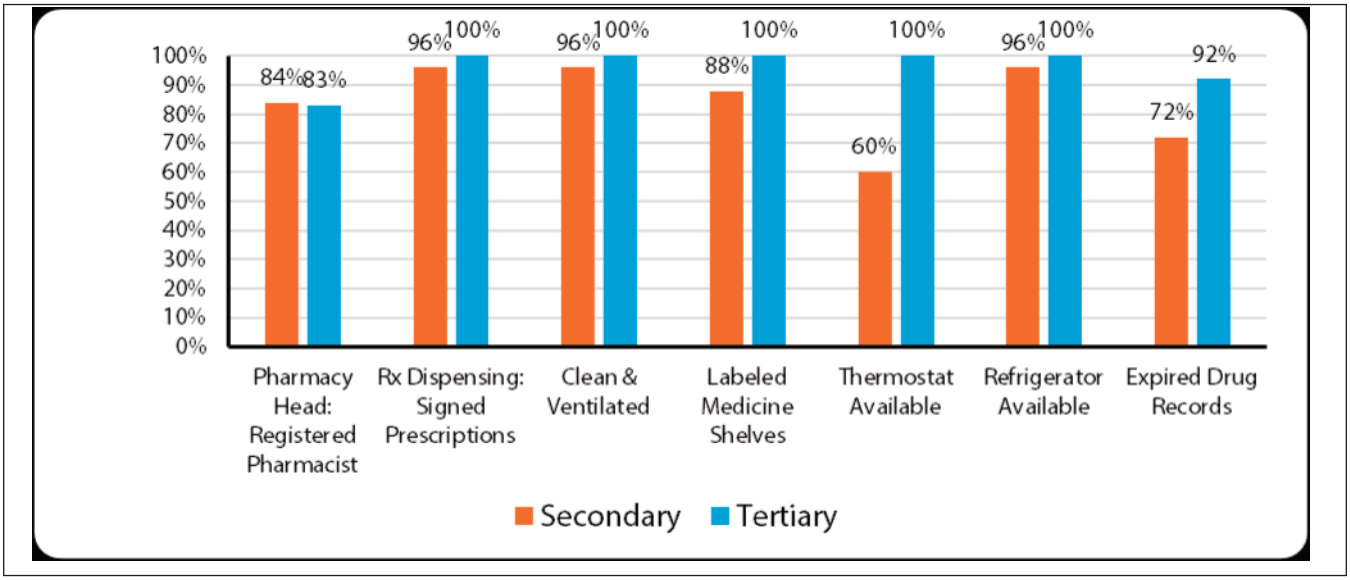

Figure-6: Availability of Pharmacy services at Secondary and Tertiary Hospitals.

functional equipment were found in blood bank equipment, including refrigeration, plasma separator, blood warmer, electronic inventory of blood products, and use of FDA and WHO-approved[19] testing kits at secondary facilities.

For radiological and imaging services, the cumulative readiness score was 221 (62%) in secondary and 125 (80%) in tertiary hospitals. Radiation monitoring devices were present at 16 (64%) secondary and 10 (83%) of tertiary hospitals. X-ray and ultrasound services were widely available in nearly all the hospitals assessed, while MRI was accessible at 7 (28%) secondary hospitals and 6 (50%) tertiary hospitals. CT scanning facilities were available in 5 (20%) secondary hospitals and 9 (75%) tertiary hospitals. Mammography cancer screening was present in 3 (12%) secondary hospitals and 4 (33%) tertiary hospitals (Figure 4).

Tertiary hospitals exhibited higher readiness for the provision of pharmaceutical products. A total of 20 secondary and 7 tertiary facilities had an in-house pharmacy, whereas 3 secondary facilities had outsourced pharmacy services. Functioning thermostats were available at only 15 (60%) secondary facilities. In 21 (83%) secondary hospitals, pharmacies were headed by qualified pharmacists registered with the Pakistan Pharmacy Council. Deficiencies were identified in recording expired drugs, with 18 (72%) secondary and 11 (92%) tertiary facilities maintaining the record. Spot checks revealed two expired medicines at two secondary-level facilities. The overall availability of 14 essential medicines recommended by WHO was 84% for secondary and 95% for tertiary facilities (Figure 6).

Discussion

Pakistan, like many other L&MICs, has embarked upon a UHC reform, currently still in its nascent phase. This is the first study that reviews the service readiness of the empanelled health facilities to provide services under the Social Health Insurance Programme (SCP) in the KP province of Pakistan.

The study findings reveal a substantial variability in service readiness of hospitals under Sehat Card Plus. While tertiary care hospitals exhibited adequate readiness across assessed clinical areas, secondary facilities demonstrated a wide range of readiness levels. We noted a generally high readiness for General Surgery, Obstetrics and Gynaecology services, exceeding 90% in both secondary and tertiary hospitals, but critical deficiencies were found in readiness for Emergency care and Intensive Care at secondary care facilities. This included gaps across infrastructure, human resources, patient management guidelines, and implementation of IP standards for the provision of intensive and critical care services. Another study conducted across 106 public and private hospitals in Pakistan has identified similar gaps.[20,21] This study highlights an urgent need for capacity-building for emergency and intensive care, especially in remote districts by upgrading secondary hospitals in the public and private sectors.

The readiness for clinical support services, such as blood banks, was found to be critically scarce, across both empanelled tertiary and secondary care facilities, with a more pronounced gap in secondary facilities. Similar challenges in blood banking have been observed in other LMICs such as Ghana, Ethiopia, Nepal, and Bangladesh.[6-8]

We strongly urge the KP Safe Blood Transfusion Authority to implement a province-wide programme addressing these challenges, ensuring the availability of blood and blood products, screening for transmissible infections, high-quality blood screening kits, and staff capacity enhancement for blood banking services.[8] It is crucial to ensure that all empanelled hospitals, both secondary and tertiary, have onsite or access to standard blood banking services at the time of empanelment and during post-empanelment monitoring.

Our findings also indicate low utilization of standardized ICD-10 coding in a significant proportion of hospitals, posing data management challenges. These have been sufficiently addressed in other LMICs such as Nigeria, Egypt, Nairobi, and Kenya.[22-24] The health insurance system in South Africa adopted a coding system, where each service is allocated a code for efficient billing and reimbursement, leading to increased efficiency, reduced reimbursement delays, and cost reduction.[25]

Most hospitals reported timely settlement of claims from the underwriters for SLIC, which is an encouraging finding. This aligns with the experiences of countries like India, Nigeria and Ghana.[26-28] However, the total Health Management Information System (HMIS) capacity was sub-optimal during the assessment, with few hospitals using the e-claims system. In line with developments evident in other LMICs like the Philippines, Kenya, India, and Bangladesh,[29-32] there is a need to develop and roll out a standardized, customized, cloud-based software programme to transition from a paper-based to a paperless system. This initiative should include electronic health records of all admissions and electronic claims for settlement within a 12–18 months period, as well as a standardized coding system of medical conditions based on ICD-10 and 11 that minimizes medical records inaccuracies, coding and billing inefficiencies, and delayed reimbursement of claims.[33,34] We strongly advocate for training programmes for hospital managers to use e-technologies, prepare and submit claims, and introduce a cultural change in adopting the new paperless system.

Hospital empannellment, based on service capacity and geographical accessibility, is essential for beneficiaries to access their entitlements.[35] Shortages in the supply of health services may result in empanelment of health facilities offering subpar services. Evidence from Indonesia, though not drawn from microinsurance, highlights the challenge of maintaining quality in settings with limited provider supply.[36] This study emphasizes the potential role of the Health Care Commission (HCC) KP in addressing the health facility challenges that exist for the SCP programme. Joint approval of facility empanelment by HCC and SLIC will bring greater transparency to this process. We also strongly advocate for the assessment of process and outcome indicators such as infection control, patient safety, waiting times, and clinical outcomes at the time of empanelment. Health Foundation KP should be invited to strengthen public-private partnerships (PPP), particularly for capacity-building in remote districts by expediting the upgradation of secondary hospitals.

The study can be generalized across the KP province based on the sampling strategy however generalizability to other provinces may be limited as the health departments of every province are different in terms of health facilities management, governance due to decentralization.

Another important limitation of the study is the absence of baseline data for facility readiness comparisons. We anticipate that this study will serve as a baseline for assessing and documenting improvements in empanelled facilities' readiness to provide services under the SCP programme.

Conclusion

The findings of this study have provided critical insights into the readiness of health facilities in Pakistan to provide services under the SCP. Drawing from experiences in other countries, it is evident that addressing the variability in readiness for clinical services, enhancing support services, and improving systems and structures can contribute to the success of the social health insurance programme in Pakistan. These findings have the potential to inform and bring useful policy changes and strategies for the enhancement of the healthcare system in Pakistan.

Disclaimer: Limited findings from this study have previously been discussed in a report titled "Third Party Evaluation of Sehat Card Plus Khyber Pakhtunkhwa" which was conducted by the Department of Community Health Science at the Aga Khan University, Karachi, Pakistan.

Conflict of interest: None.

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