

ASSIGNMENT 2: DISTRICT SITUATION ANALYSIS (15%)

Health System Situation Analysis of Swat District, Khyber Pakhtunkhwa, Pakistan

Using Health Indicators for Assessing Health System Performance and
Evidence-Based Planning

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Table of Contents

Table of Contents	2
1. District Profile	3
1.1 Geographic and Demographic Overview	3
1.2 Socioeconomic Characteristics	4
1.3 Health Infrastructure	4
2. Analysis of Health Indicators.....	4
2.1 Health Status Indicators.....	4
2.2 Health System Indicators	6
3. Identification of Key Health Issues	6
4. Health System Analysis.....	7
5. Recommendations.....	8
6. References.....	8

1. District Profile

1.1 Geographic and Demographic Overview

Swat District is located in the Malakand Division of Khyber Pakhtunkhwa (KPK), Pakistan, covering 5,337 km² across Swat Kohistan (north) and Swat Proper (south). As per the 2023 Census, the district population is 2,687,384 (51.2% male, 48.8% female), with 29.6% urban and 70.4% rural. The population grew from 2.31 million (2017) to 2.69 million (2023), at 2.56% annually. Administratively, Swat comprises seven tehsils: Babuzai (696,697), Matta (552,431), Kabal (480,827), Khwaza Khela (307,300), Behrain (270,623), Barikot (220,148), and Charbagh (159,358). The population density is 504 persons/km², with 30.1% under 10 years (PBS, 2023).

Table 1: Key Demographic Indicators of Swat District (2023)

Indicator	Value (2023)
Total Population	2,687,384
Male Population	1,375,358 (51.2%)
Female Population	1,311,939 (48.8%)
Urban Population	794,368 (29.6%)
Rural Population	1,893,016 (70.4%)
Population Density	504 persons/km ²
Sex Ratio	104.83 males/100 females
Literacy Rate (Overall)	48.13%
Male Literacy Rate	61.83%
Female Literacy Rate	33.95%
Household Size (Average)	7.05 persons
Population < 10 years	30.1%
Annual Growth Rate (2017-23)	2.56%

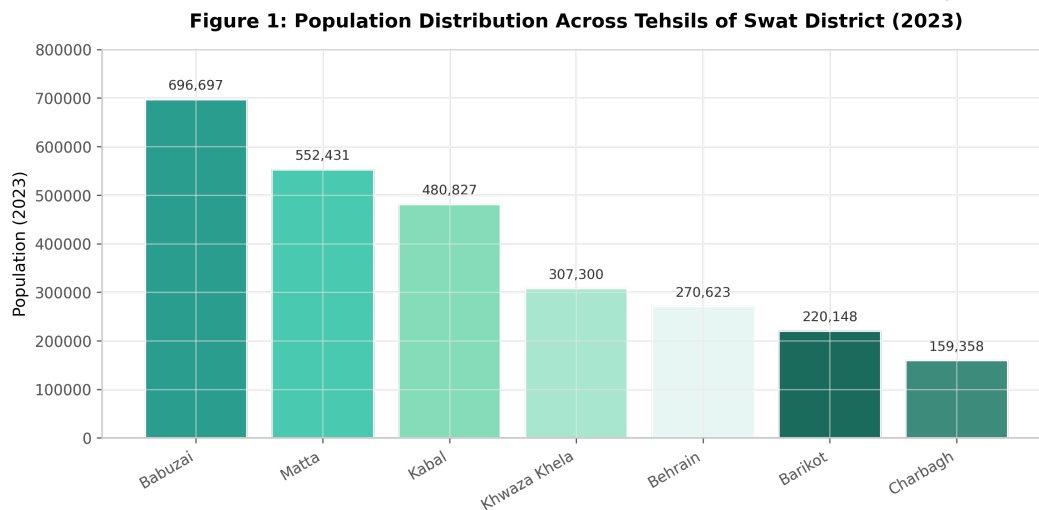


Figure 1: Population Distribution Across Tehsils of Swat District (2023)

1.2 Socioeconomic Characteristics

Swat's literacy rate is 48.13%, with significant gender disparity (male 61.83%, female 33.95%). The economy depends on tourism (37-38%) and agriculture (31%). The 2010 floods and 2007-2009 conflict caused lasting infrastructure damage. Access to improved water and sanitation remains uneven in remote areas (PBS, 2023; KP Board of Investment, 2024).

1.3 Health Infrastructure

The district health system operates under the KPK Regional and District Health Authorities Act 2019, anchored by the Saidu Group of Teaching Hospitals (Category-A). The network includes Type-D hospitals, RHCs, BHUs, and EPI centers, though remote tehsils face access gaps (Government of KPK, 2024).

Table 2: Health Facility Network in Swat District

Facility Type	Number	Key Facilities
DHQ/Teaching Hospital	1	Saidu Group of Teaching Hospitals (Category-A)
Type-D Hospital	6	Matta, Kabal, Barikot, Khwazakhela, Madyan, Manglawar
Rural Health Centre (RHC)	3+	Chuprial, Deolai, Khazana
Basic Health Unit (BHU)	25+	Distributed across 7 tehsils
EPI Centers	30+	BHU, RHC, DHQ-based vaccination points
Private Facilities	Numerous	Private clinics, hospitals in Mingora/Saidu Sharif

2. Analysis of Health Indicators

2.1 Health Status Indicators

Health status indicators reveal significant challenges in Swat. Table 3 presents comparative data across national, provincial, and district levels.

Table 3: Key Health Status Indicators — Comparison Across Levels

Indicator	Pakistan	KPK	Swat (Est.)
IMR (per 1,000 LB)	62	48	45
NMR (per 1,000 LB)	42	35	32
MMR (per 100,000 LB)	154	130	120
U5MR (per 1,000 LB)	67	52	48
Stunting (% U5)	37.6	33.0	30.0
Wasting (% U5)	7.1	6.5	6.0
Anemia - WRA (%)	41.3	38.0	36.0
Skilled Birth Attendance (%)	68	58	55
Contraceptive Prevalence (%)	34	28	25

Figure 2: Health Status Indicators Comparison - Pakistan vs KPK vs Swat District

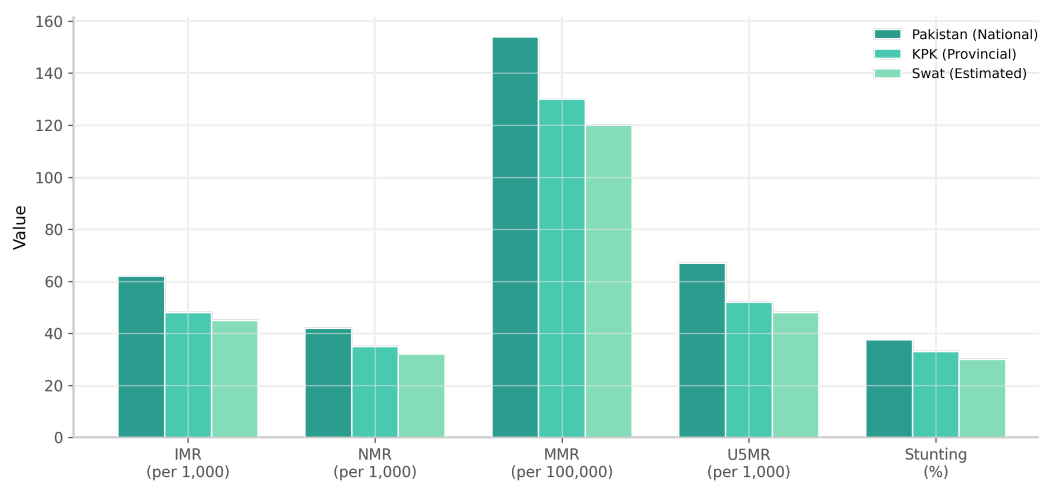


Figure 2: Health Status Indicators — Pakistan vs. KPK vs. Swat District

KPK's IMR is estimated at 48/1,000 live births and MMR at 130/100,000. Communicable diseases are a major burden: malaria shows 7.83% slide positivity (peak August-September), while the 2013 dengue epidemic recorded 9,036+ cases with attack rates of 41.25/1,000 in urban areas versus 1.7/1,000 in rural areas. Malnutrition affects 37.6% of under-5 children (stunting) and 41.3% of women (anemia) nationally, with similar patterns in Swat (PDHS, 2023; Afridi et al., 2017).

Table 4: Communicable Disease Burden in Swat District

Disease/Condition	Estimated Burden	Key Risk Factors
Dengue Fever	Epidemic potential; 7.18/1,000 AR (2013)	Urban vector breeding, climate variability
Malaria (P. vivax)	SPR: 7.83% (peak Aug-Sep)	Seasonal transmission, outdoor exposure
Tuberculosis	High burden province-wide	Poverty, overcrowding, limited diagnostics
Respiratory Infections	Leading U5 cause of death	Indoor air pollution, malnutrition, cold climate

Disease/Condition	Estimated Burden	Key Risk Factors
Diarrheal Diseases	Major child killer	Unsafe water, poor sanitation, hygiene
Neonatal Conditions	32% of U5 deaths	Preterm birth, birth asphyxia, infections

2.2 Health System Indicators

Health system indicators reveal critical capacity gaps. KP's health workforce density is 1.15/1,000 population (WHO minimum: 4.45). The doctor gap is 18,824 and nurse/midwife gap is 141,792 province-wide. Pakistan's nurse-to-doctor ratio of 0.4 is among the world's lowest. Health spending at 1.4% of GDP falls far below WHO's 6% recommendation. The Sehat Sahulat Program provides PKR 460,000-1,000,000 coverage per family annually. Skilled birth attendance in KPK is ~68%, dropping significantly in rural Swat (KP Health Policy, 2023; PDHS, 2023).

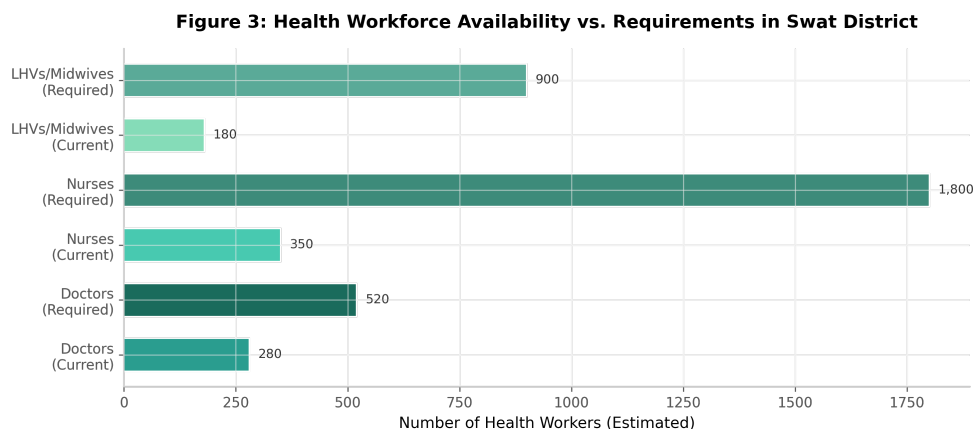


Figure 3: Health Workforce Availability vs. Requirements (Estimated)

Table 5: Summary of Health System Indicators

Indicator	Value	Benchmark/WHO Std.
Health Workforce Density (per 1,000)	1.15 (KPK)	4.45 (WHO minimum)
Doctor-to-Population Ratio	~1:1,500	1:1,000 (WHO)
Nurse-to-Doctor Ratio	0.4 (Pakistan)	>2.0 (OECD average)
Health Expenditure (% GDP)	1.4%	6% (WHO rec.)
SS Coverage (KPK)	Universal (all residents)	UHC target
DHIS-2 Reporting Rate	~100% facilities	>90% target
EPI Immunization Coverage	Variable; gaps in remote UCs	>90% target

3. Identification of Key Health Issues

Based on data analysis, the following priority issues have been identified using criteria of magnitude, severity, feasibility, and alignment with national priorities.

Table 6: Prioritized Health Issues in Swat District

Health Issue	Priority	Justification
Maternal/Neonatal Mortality	HIGH	MMR >120; <60% skilled birth attendance rural; geography barriers
Communicable Diseases (Dengue/ Malaria/TB)	HIGH	Epidemic history; endemic malaria; high burden province
Child Malnutrition (Stunting/ Wasting)	HIGH	30-38% stunting; anemia 36%; long-term developmental impacts
Health Workforce Shortages	HIGH	Critical gaps; retention challenges; equity in deployment
Non-Communicable Diseases	MEDIUM	Rising burden; limited NCD services at primary care
Mental Health	MEDIUM	Conflict legacy; disaster exposure; no district services
Health Financing Gaps	MEDIUM	1.4% GDP; OOP burden; primary care underfunded

High-priority issues include: (1) Maternal/neonatal health — driven by low skilled birth attendance in rural areas (<60%), limited emergency obstetric care, and difficult terrain; (2) Communicable diseases — dengue (2013 epidemic: 9,036+ cases), endemic malaria (7.83% SPR), and TB; (3) Malnutrition — stunting affects 30-38% of under-5s, with 36%+ anemia among women; (4) Health workforce shortages — critical gaps across all cadres with rural retention challenges (PDHS, 2023; Afridi et al., 2017).

4. Health System Analysis

Using the WHO health system building blocks framework, key gaps in Swat's health system are identified:

Service Delivery: Geographic barriers limit access for 70% of the rural population. Type-D hospitals lack equipment and specialists, BHUs suffer from staffing gaps and medicine stock-outs, and emergency referral mechanisms remain weak for obstetric and trauma cases (KP Health Policy, 2023).

Workforce: Human resources are the critical constraint. Swat's doctor-to-population ratio falls below 1:1,500 (WHO recommends 1:1,000). KP faces a nurse/midwife gap of 141,000+. Retention in remote tehsils (Behrain, Matta) is extremely poor. LHW supervision and quality remain concerns (HRH Vision 2030, 2018).

Access and Equity: Rural populations travel 2-4 hours to reach secondary care. Female patients face purdah-related access barriers with scarce female providers. The Sehat Sahulat Program improved tertiary financial access, but primary/preventive gaps persist. The 2013 dengue epidemic exposed urban-rural surveillance disparities (Afridi et al., 2017).

System Performance: These gaps create a cycle of poor outcomes. Low workforce density compromises service quality; geographic barriers delay care-seeking; 1.4% GDP expenditure limits infrastructure investment; resulting underperformance perpetuates poverty and ill health (SDPI, 2023).

5. Recommendations

Evidence-based recommendations aligned with Pakistan's National Health Vision 2016-2025 and UHC goals:

Table 7: Evidence-Based Recommendations

Domain	Recommended Intervention	Alignment
Maternal Health	CEmONC in Matta/Behrain; 24/7 skilled birth attendance	NHV 2016-25; SDG 3.1
Child Health	Nutrition integration in MNCH; IMCI scale-up	NHV; EPI National Strategy
Communicable Disease	Dengue vector surveillance; malaria RDT diagnostics; TB active case finding	IDSR; Malaria Control Program
Workforce	Female provider recruitment; nursing school; telemedicine	HRH Vision 2030; UHC
Service Delivery	BHU upgrading; emergency ambulance network; referral protocols	KPK Health Policy 2023
Health Financing	District budget increase; SSP awareness; results-based financing	Sehat Sahulat Program
Health Information	DHIS-2 quality improvement; local data use for planning	Health Data Quality Framework

Maternal/Child Health: Establish CEmONC centers in Matta and Behrain; deploy 24/7 skilled birth attendants at Type-D hospitals; create emergency ambulance networks; integrate nutrition screening into MNCH.

Communicable Diseases: Enhance dengue surveillance (July-October); establish NS1/malaria RDT diagnostics at Type-D hospitals; implement CLTS; strengthen TB active case finding.

Workforce: Fast-track female provider recruitment with rural incentives; establish a district nursing school; task-shift to supervised LHWs; deploy telemedicine from SGTH.

System Strengthening: Increase district budget for primary care; expand SSP awareness; improve DHIS-2 data quality; align planning with KPK Regional Health Authority frameworks.

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