

# Weather Impact Analysis

## Annual Report 2025

Correlation Between Weather Patterns & Medicine Demand | Generated: January 18, 2026

### Annual Weather Summary - Karachi 2025

Metric	Value	Notes
Average Temperature	27.8C	(Range: 14C - 42C)
Average Humidity	58%	(Range: 32% - 89%)
Rainy Days	23 days	(Monsoon: Jul-Sep)
Heat Wave Events	8 events	(May-June)
Cold Spells	3 events	(Dec-Jan)

### Seasonal Demand Patterns

Season	Avg Temp	Humidity	Demand	Top Medicines	Notes
Winter (Dec-Feb)	18C	45%	+22%	Paracetamol, Cough Syrups	Flu Season
Spring (Mar-May)	32C	38%	+15%	Antihistamines, ORS	Allergies, Heat
Monsoon (Jun-Sep)	30C	78%	+31%	Antibiotics, Antifungals	Infections Peak
Autumn (Oct-Nov)	26C	52%	+8%	Mixed	Transition Period

### High Impact Weather-Medicine Correlations

Weather Trigger	Medicine Category	Sales Impact	Correlation	Strength
Humidity > 75%	Antibiotics	+28%	0.82	Very Strong
Temperature > 35C	ORS Solutions	+45%	0.91	Very Strong
Temperature < 20C	Paracetamol	+35%	0.87	Very Strong
Rain Events	Antifungals	+22%	0.74	Strong
Humidity > 75%	Respiratory Meds	+18%	0.69	Strong
Temperature Drop >5C	Cold/Flu Meds	+41%	0.85	Very Strong

### Monthly Weather vs Sales Trend

Month	Temp	Humidity	Sales	Pattern
January	18C	42%	89,234	Flu season
February	21C	38%	72,310	Low season

March	28C	35%	78,456	Allergy start
April	33C	32%	85,678	Heat begins
May	36C	45%	92,123	Heat wave
June	34C	65%	98,456	Pre-monsoon
July	31C	78%	112,345	Monsoon peak
August	30C	82%	118,420	Infections peak
September	31C	75%	108,234	Monsoon end
October	29C	58%	95,678	Transition
November	24C	48%	88,456	Cooling
December	19C	45%	98,432	Winter start

Extreme Weather Events Impact

Date	Event	Demand Spike	Top Medicines	Stockouts
May 15-18	Heat Wave (42C)	+67%	ORS, Electrolytes	3 stockouts
Jul 22-25	Heavy Rain (180mm)	+89%	Antibiotics	5 stockouts
Aug 8-12	Flooding	+112%	Antibiotics, Antifungals	8 stockouts
Dec 24-28	Cold Spell (14C)	+45%	Paracetamol, Cough	2 stockouts

Extreme weather events caused 18 stockout incidents in 2025

Weather-Based Inventory Recommendations

- 1. PRE-MONSOON (June): Increase Antibiotic stock by 40%, Antifungals by 30%
- 2. SUMMER (May-June): Stock ORS +50%, Antihistamines +25%
- 3. WINTER (Dec-Jan): Paracetamol +35%, Cough Syrups +40%
- 4. ALERT SYSTEM: Set up weather-triggered automatic reorder alerts
- 5. BUFFER STOCK: Maintain 2-week buffer for weather-sensitive medicines
- 6. SUPPLIER CONTRACTS: Negotiate quick-delivery terms for monsoon season

2026 Weather Outlook & Preparation

Period	Forecast	Recommendation
January	Cold spell expected	Stock Paracetamol +30%
May-June	Earlier heat wave predicted	Pre-position ORS stock
July-Sept	Above-average rainfall forecast	Antibiotics +50%
Year-round	Climate variability increasing	Increase safety stock 15%