

SUPPLEMENTARY BOX S1

Sample Weekly PIU Risk Brief

Completed Illustrative Example — Synthetic Data

This box presents a completed example of a Preparedness Intelligence Unit (PIU) weekly risk brief using synthetic data. It demonstrates realistic surveillance data, 7-1-7 framework performance tracking, climate-integrated forecasting, and actionable recommendations with clear accountability. Additional reporting templates are provided in Supplementary Material S6.

Supplementary Box S1: Sample Weekly Preparedness Intelligence Unit (PIU) Risk Brief (Completed Illustrative Example; synthetic data)

WEEKLY RISK BRIEF				
Example Country Preparedness Intelligence Unit (PIU) Week 08, 2026 Prepared by: PIU Lead				
1. SITUATIONAL SUMMARY				
<p>Overall risk posture: MODERATE with rising concerns in two domains.</p> <p>Cholera transmission continues in Plamba Region with 47 confirmed cases reported in Week 08 (18% increase from Week 07), linked to contaminated water sources following heavy rainfall 16–19 February. Lassa fever activity remains within seasonal baseline across all districts. Climate forecasts indicate continued above-average rainfall through March, elevating risk for water-borne disease amplification.</p>				
2. PRIORITY ALERTS THIS WEEK				
Disease / Location	Details			Risk Level
Cholera Plamba Region (Tukundu Capital City)	47 confirmed cases, 18% increase week-on-week. Attack rate 12.3 per 100,000 population. Epicentre: Tando Bay informal settlement.			HIGH RISK
Acute Watery Diarrhoea (AWD) Komboko District	12 suspected cases (laboratory confirmation pending). Cluster detected in Lansadi town following water system contamination.			MODERATE
Lassa Fever Turinti District	3 confirmed cases (within seasonal baseline). No healthcare worker infections reported.			LOW RISK
3. 7-1-7 PERFORMANCE TRACKER (Week 08)				
Event	Detection (≤7 days)	Notification (≤1 day)	Response (≤7 days)	Status
Cholera — Plamba Region	3 days ✓	8 hours ✓	2 days ✓	ALL MET
AWD — Komboko	2 days ✓	2 days ✓	Pending lab	MONITORING
4. 14-DAY PROBABILISTIC FORECAST (Weeks 09–10)				
Disease / Area	Forecast Detail	Brier Score	Risk	
Cholera (Plamba Region)	Probabilistic model forecasts 55–85 additional cases (median 68) if current transmission continues. Meteorological forecast: 85% probability of continued above-average rainfall through Week 10. Flood risk elevated in coastal informal settlements. Key drivers:	0.22	HIGH	

	inadequate Water, Sanitation, and Hygiene (WASH) infrastructure, delayed chlorination, population mobility.		
AWD (Komboko District)	Lab confirmation expected Week 09 Day 2. If cholera confirmed, geographic spread likely to 3 adjacent chiefdoms. Key drivers: shared water sources, market day congregation patterns.	Pending	MODERATE

5. RECOMMENDED ACTIONS

Priority	Action	Owner	Deadline
IMMEDIATE (48 hours)	Deploy Rapid Response Team (RRT) to Komboko District; activate Oral Rehydration Point in Tando Bay	District Health Officer (Komboko); Plamba Region Expanded Programme on Immunization (EPI) Coordinator	Week 08 Day 3
PREVENTIVE (Weeks 09–10)	Pre-position 10,000 Oral Rehydration Salts (ORS) sachets in coastal districts; issue public health advisory on water treatment	National Medical Stores; Health Promotion Unit	Week 09 Day 1

6. DATA QUALITY FLAGS

- ⚠ Northlands District:** Zero reporting from 8/45 peripheral health units (17.8% non-reporting rate) for Week 08. Follow-up: District Surveillance Officer contacted; connectivity issues identified; manual reporting reinitiated.
- ⚠ Eastfield District:** Laboratory confirmation turnaround time exceeded 72-hour target for 3/5 suspected Lassa samples (average: 96 hours). Cause: reagent stock-out at district laboratory; samples redirected to reference laboratory.
- ⚠ Climate Data Integration:** Meteorological Department rainfall data stream interrupted 23–25 February due to server maintenance. Restored 26 February. Retrospective data backfilled; no forecasting impact.

7. NEXT REVIEW

Wednesday, 5 March 2026, 09:00 GMT | Special attention: Komboko laboratory results; cholera case trajectory post-rainfall; Tando Bay intervention impact assessment

About this example: This completed risk brief demonstrates how routine PIU outputs translate integrated surveillance, laboratory, climate, and logistics signals into operational decisions. The 7-1-7 framework (detect within 7 days, notify within 1 day, initiate early response within 7 days) tracker enables rapid performance assessment. Brier scores indicate forecast accuracy at the time of the last validated forecast. Color coding (HIGH/MODERATE/LOW) enables rapid executive decision-making. All data are synthetic and for illustrative purposes only.

List of Abbreviations

Abbreviation	Full Term
7-1-7	Detect within 7 days, notify within 1 day, initiate early response within 7 days
AWD	Acute Watery Diarrhoea
DHIS2	District Health Information Software 2
eIDSR	Electronic Integrated Disease Surveillance and Response
EPI	Expanded Programme on Immunization
ORS	Oral Rehydration Salts
PHEOC	Public Health Emergency Operations Centre
PIU	Preparedness Intelligence Unit
RRT	Rapid Response Team
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization