

Trend card

Resampling, rolling means, seasonality and the threshold rules.

```
df["date"] = pd.to_datetime(df["date"]); df = df.set_index("date")

weekly = df["cases"].resample("W-SUN").sum()      # state the reporting week

monthly = df["cases"].resample("M").sum()

smooth = weekly.rolling(4).mean()                # show the raw points too

yoy = monthly.pct_change(12)                     # same month last year
```

Rule	Why
Never compare a partial current period with complete ones	It always looks like a fall
Show gaps as breaks in the line	A line across a gap claims a value you do not know
Declare the smoothing window in the caption	A different window gives a different picture
Compare like months across years before attributing a seasonal change	The season is the easiest false effect
Take the alert threshold from the national emergency management guidance	A local threshold cannot be compared or trigger a response
Check reporting facilities before reading a rise	More reporters look like more cases

Based on the ERAS Africa Advanced Data Analysis Using Python course, 2026, WHO surveillance guidance, the EPHI public health emergency management guidelines, the STROBE statement and the pandas, SciPy and statsmodels documentation. Free to copy and adapt with attribution.