



Domains of Data Quality



1) Completeness & timeliness of data

2) Internal consistency of reported data

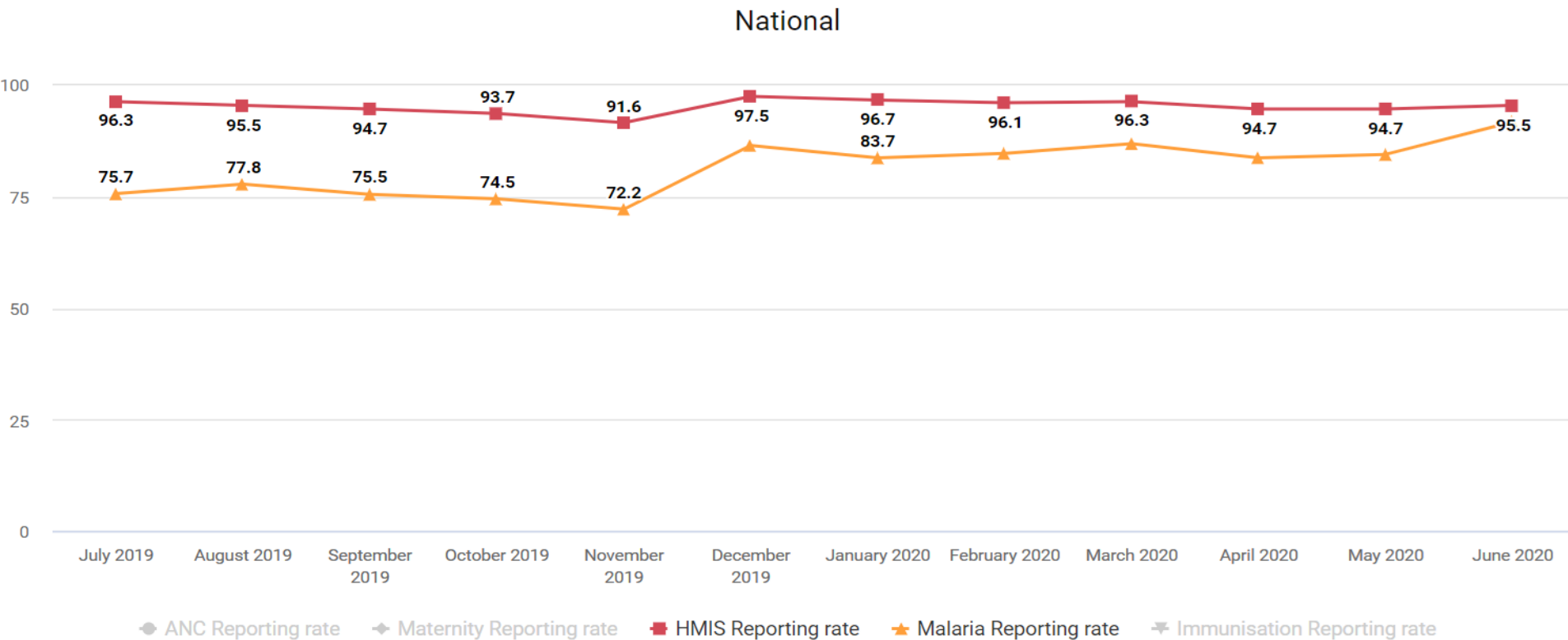
3) External consistency, i.e. agreement with other sources of data, e.g. surveys

4) Consistency of population estimates – review the denominators used to calculate coverage



1st domain: Completeness

DQ-01: Reporting rates of core data sets, nationwide, by month, last 12 months - Edited





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2nd domain: Internal Consistency

Focus

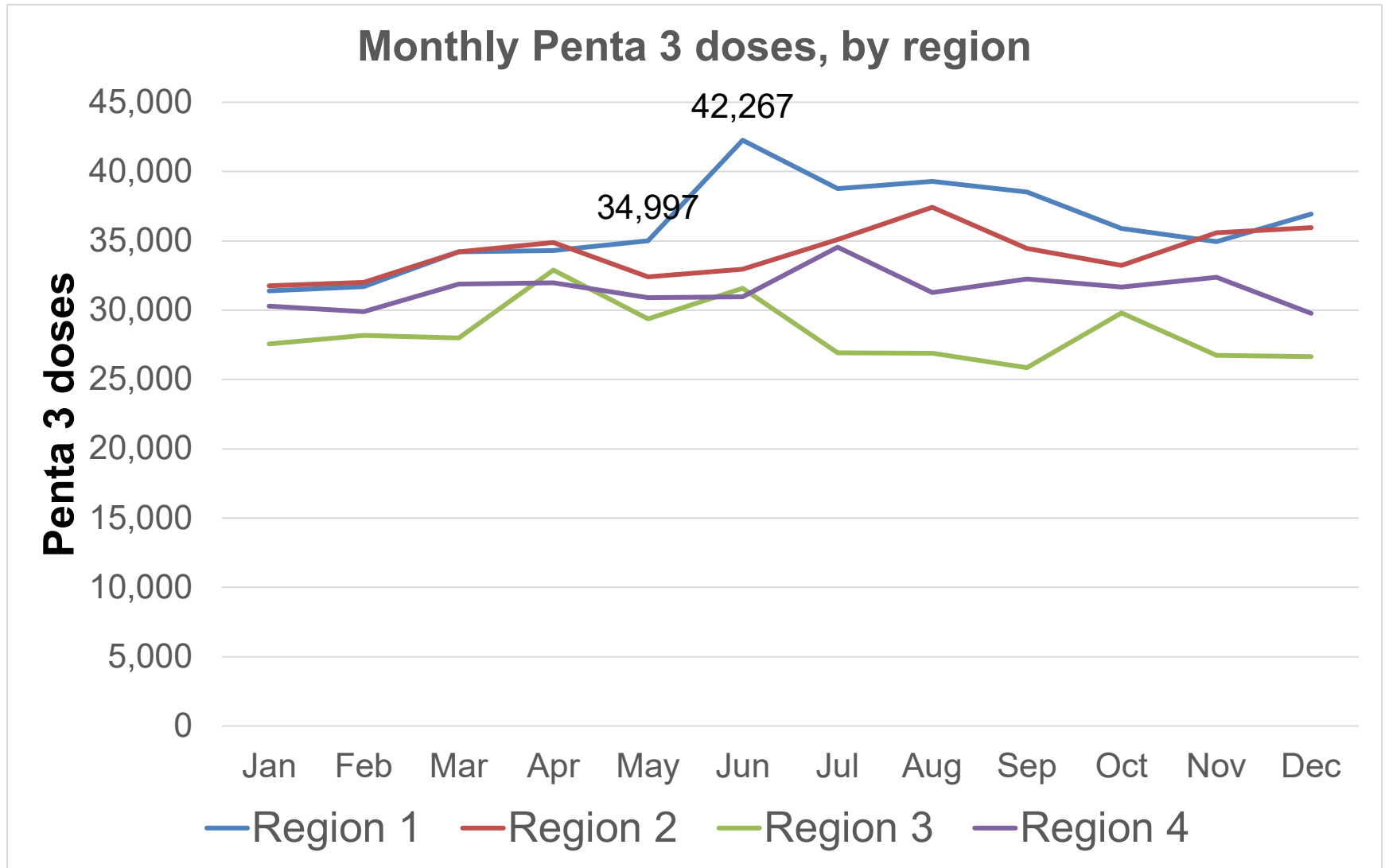
- Plausibility (apparent accuracy) of the data

Metrics

- a) Consistency over time
- b) Consistency of related indicators (e.g. DPT 1 vs DPT 3)
- c) Verification factor (from a facility survey) -- consistency between clinic registers and reported data



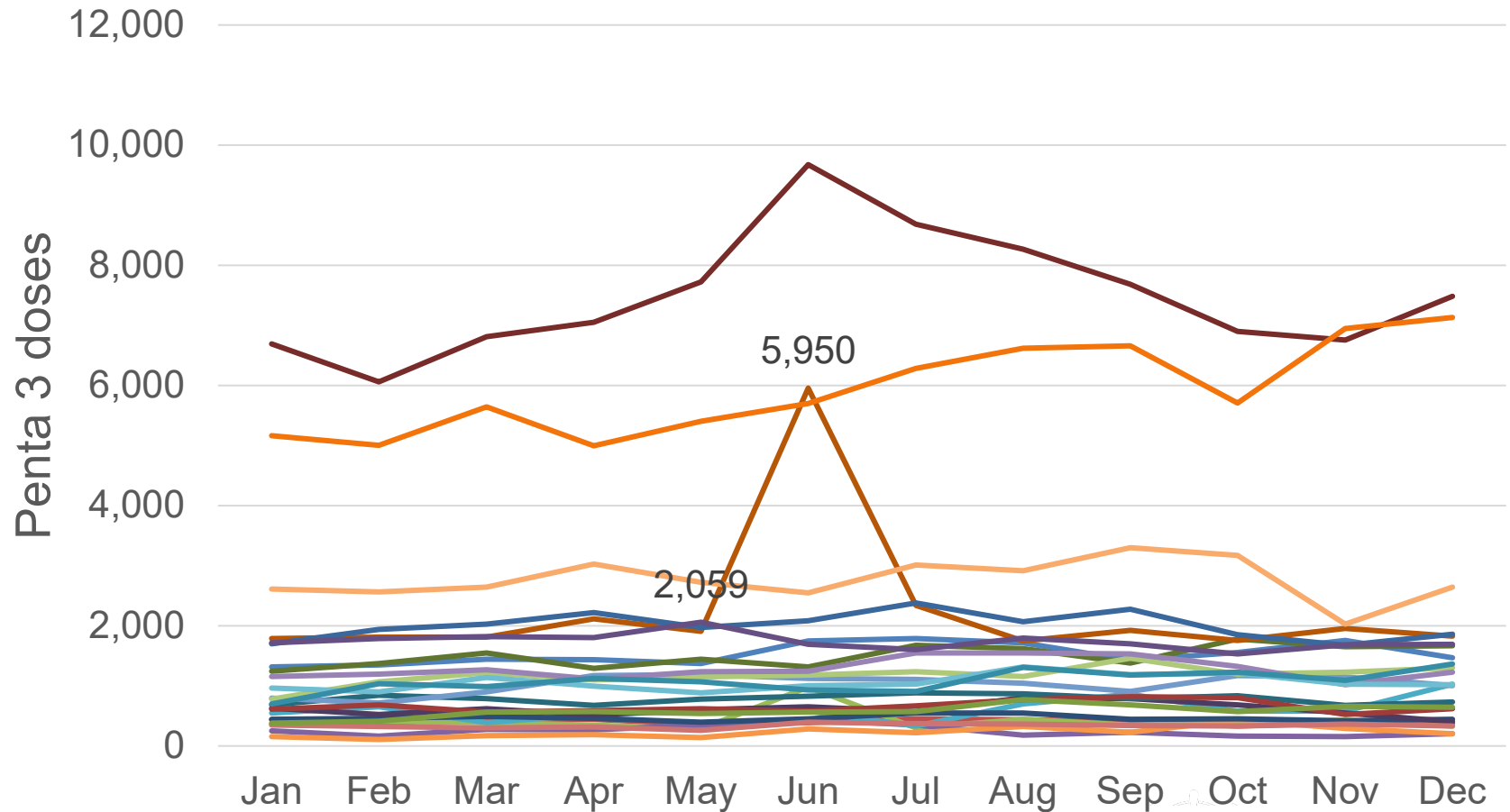
Domain 2a: Consistency from month to month





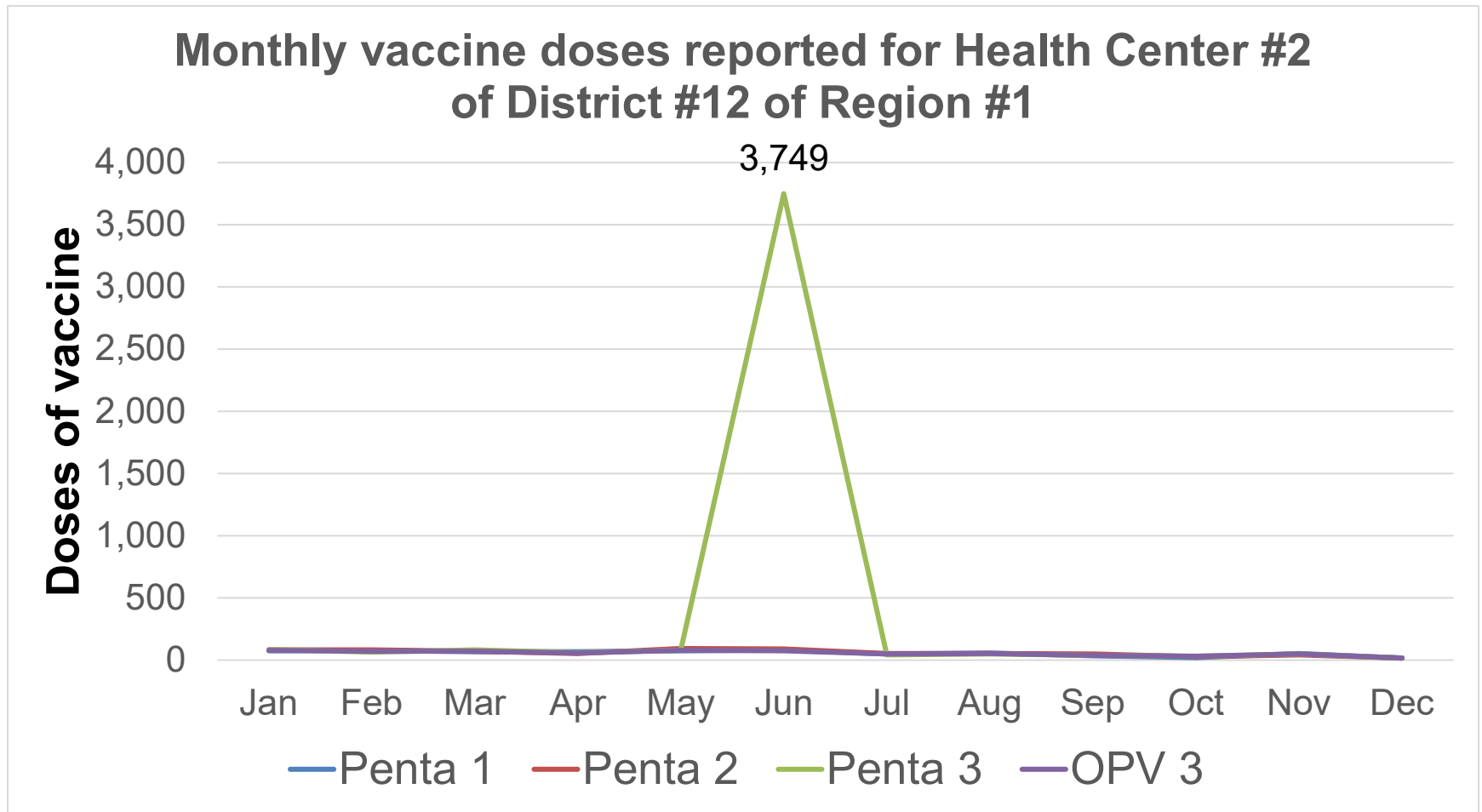
Domain 2a: Suspicious values become more apparent by “drilling down” to district-level data

Monthly Penta 3 doses, by district of region 1





Domain 2a: by further “drilling down” to the facility-level data, we can often show that an extreme outlier is an error





Domain 2a: WHO's Data Quality Tool rapidly identifies extreme outliers and ranks the outliers in order of importance

WHO Data Quality Tool Dashboard Analysis ▾ Annual Review More ▾

Unit	Data	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14
Kawe dispensary	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	26.0	20.0	30.0	60.0	19.0	4647.0	24.0		7.0	18.0	20.0	26.0
Katesh Health Center	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	30.0	4345.0	53.0		54.0	63.0		32.0	37.0	36.0	34.0	38.0
ST. Aloyce Health Center	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	25.0	23.0	23.0		33.0	34.0	22.0	26.0	3432.0	35.0	21.0	49.0
RC/K/Ndege Dispensary	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	19.0	3021.0	18.0	15.0	28.0	35.0	22.0	42.0	36.0	32.0		39.0
Mlali Health Center	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	13.0	16.0	1710.0	17.0	13.0	17.0	9.0	12.0	6.0	12.0		
Kandashi Dispensary	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	17.0	13.0	24.0	15.0	14.0	20.0	16.0	1328.0	15.0	14.0	26.0	18.0
Balang'a Dispensary	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	1.0	6.0	13.0	5.0	3.0	11.0	9.0		1212.0	11.0	13.0	27.0
Ruanda Health Center	Penta vaccines given (KE, Under 1, Dose 3, Inside Service Area)	178.0	151.0	171.0	143.0	136.0	168.0	155.0	188.0	1110.0	121.0		169.0



2nd domain: Internal Consistency of Reported Data

Focus

- Plausibility (apparent accuracy) of the data

Metrics

- a) Presence of “outliers” (suspicious values)
- c) Consistency of related indicators
- d) Verification factor (a facility survey) -- consistency between clinic registers and reported data



Domain 2b:

Consistency between related indicators

Some examples:

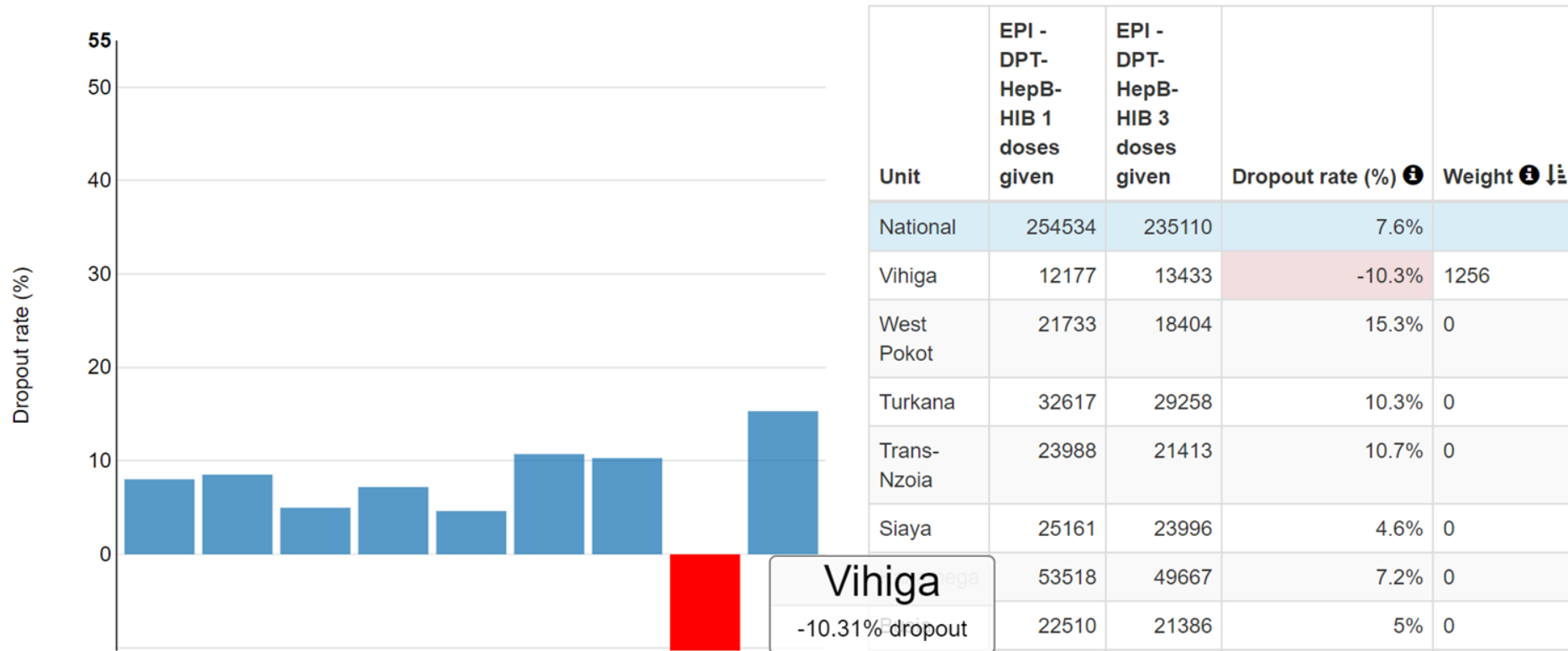
- Penta 1 & Penta 3 (dropout)
- Penta 1 & OPV 1
- Malaria - confirmed cases (from the OPD report) & Malaria - tested positive by RDT or microscopy (from the lab report)

— end —



Domain 2c: Inconsistency of related indicators

EPI - DPT-HepB-HIB 1 doses given to EPI - DPT-HepB-HIB 3 doses given dropout. 2019.

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Dimensions of Data Quality

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4) Consistency of population estimates – review the denominators used to calculate coverage



Domain 3: An estimate of coverage based on routine data can be compared to an estimate from a household survey

EXTERNAL COMPARISON

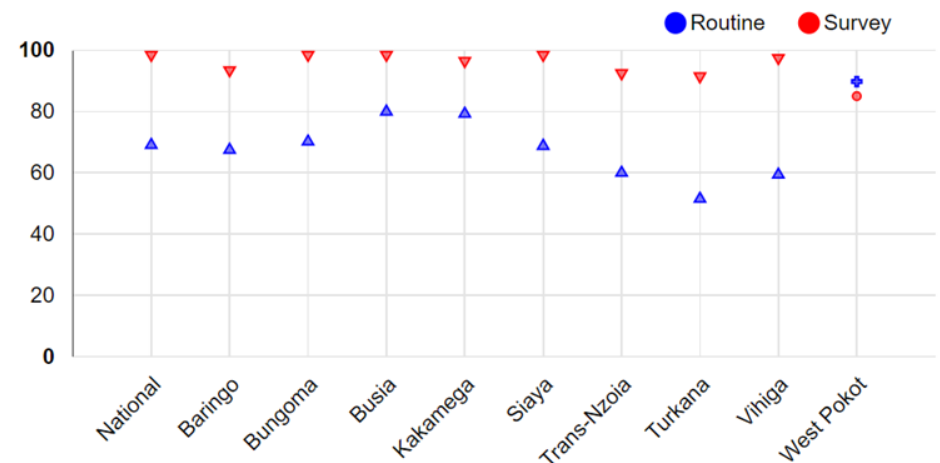
Comparison with external/survey data

Consistency of routine data with data from external source, e.g. population-based surveys.

ANC 1 coverage

Survey value	98%
Routine value	69.6%
Quality threshold	$\pm 15\%$
Overall score	71%
Number of SNU2 with divergent score	8
Percent of SNU2 with divergent score	88.9%

Baringo, Bungoma, Busia, Kakamega, Siaya, Trans-Nzoia, Turkana, Vihiga



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Domain 4: Consistency of Denominator Estimates

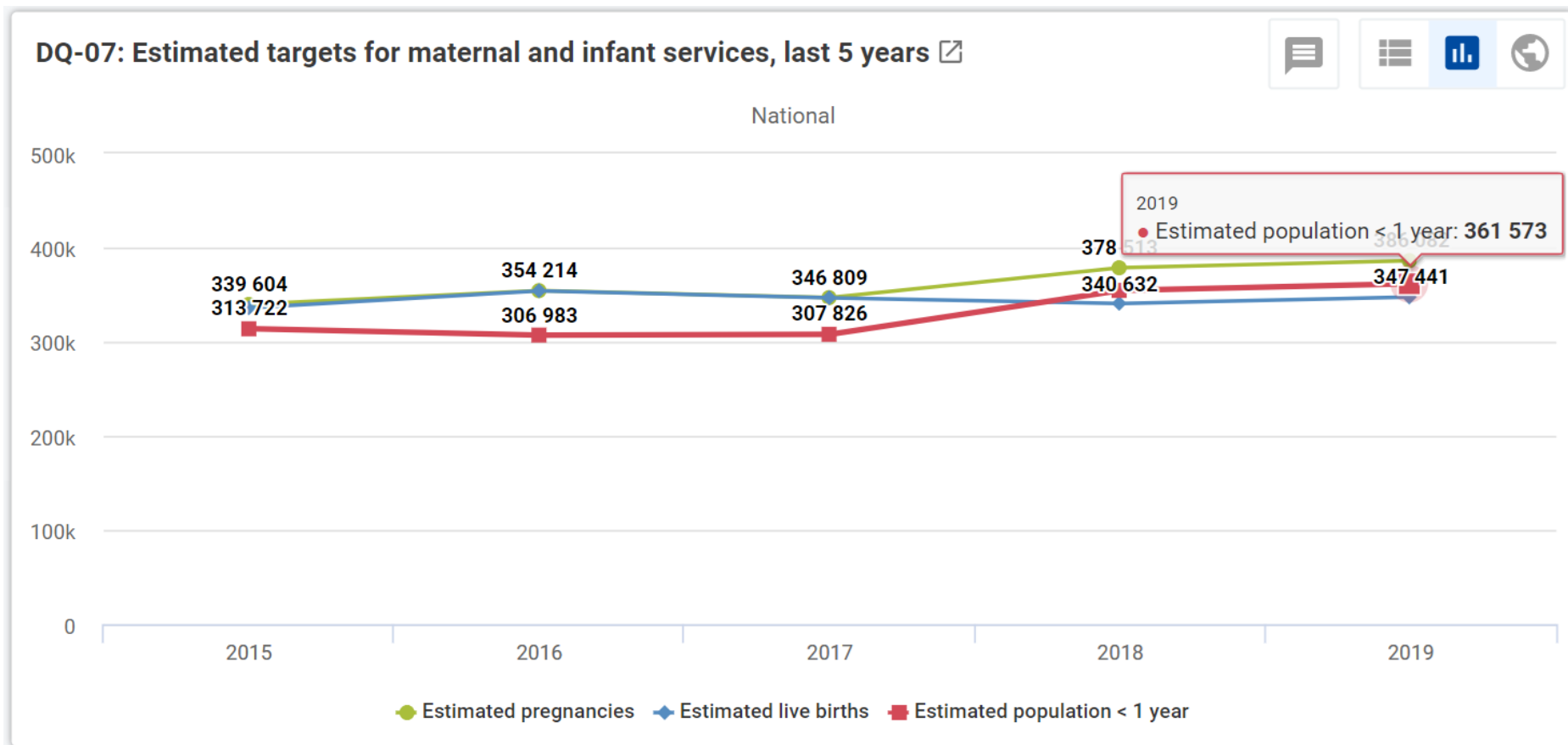
Focus

- Determine whether you have good denominator estimates

Process

- Review the consistency over time
- Compare estimates of related denominators (e.g. pregnancies vs live births vs infants)

Domain 4: Assess the consistency of denominator estimates



Thank you

— and from —