



HCI Norms for Presentation of Time Series Charts

Why do we need data presentation norms?

During the “*Measuring our Results in HCI*” session at the December 2007 HCI Launch Week, HCI staff identified the need to develop specific and consistent expectations or norms for presenting data (results) across the project. This need was based on QAP’s past experience, in which time series charts displayed during presentations (Quarterly Review meetings and other presentations) were often difficult to interpret for those viewing them, because they did not have sufficient information on them.

Purpose of these norms

- To ensure that all HCI-generated time series charts contain adequate information for those viewing them to understand and interpret what is being presented

Norms for Data Presentation

Norms are presented below in three categories: a set of norms valid for any chart and then additional specifications for charts of individual QI team data and for charts of aggregated data across sites. These norms should be built into the way charts are automatically generated by EXCEL and adhered to for any data presentation (e.g., paper presentation or electronic; at a learning session, an in-country presentation, a Quarterly Review Meeting, etc.). Following the norms below are several graphs which as examples of the norms applied to both site level and aggregated data for a variety of indicator types.

All time series charts should have:

1. **A clear, well-defined title:** A clear and well-defined title that expresses who, what, when, and where. *The title should describe the key message that the graph is meant to convey.*
2. **Labeled X- and Y-Axis:** Axes should include a “scale” such as 0 – 100% and a “label” which describes what variable or indicator is being represented on the axis. In most cases, the Y-axis label should contain the indicator itself, with an expanded definition if needed (see norms 3. and 4. below).
3. **Denominator definition:** The criteria for being counted in the denominator.
4. **Numerator definition:** The criteria for being counted in the numerator. When the graph is presenting count data (instead of a percentage or rate), the description of the indicator should clearly indicate whether this is a count of new cases or a cumulative value over time.
5. **Denominator values:** If the indicator being shown is a percentage, the number of cases counted in the denominator for each measurement period should be presented. If this will unduly crowd the chart, a note of the average sample size of the denominator should be labeled on the graph.
6. **Data source:** A brief description of the source of data should be included (i.e., all births recorded in the maternity register, selected maternal charts for review, direct observations, etc.)
7. **Sampling strategy:** If data for the denominator come from a sample, rather than all cases that fit the denominator definition in that period, state how sampling was done (e.g., systematic sample of 10 records).
8. **Legend:** Use a legend to distinguish between multiple graph lines if more than one indicator or study group is shown on a single graph.

Time series charts showing data for one site or one QI Team should also:

9. Annotate key tested changes: Annotations can be of two categories: (1) *key* changes implemented as part of QI interventions and (2) *key* events within the context where data was collected that may explain changes in results over time. Key changes represent QI interventions which relate to substantial changes in the value of the indicator (positive or negative). Although not required, substantial changes which were ineffective may also be annotated to highlight learning of what did not work.

Time series charts showing aggregated data across multiple sites should also include:

10. Number of sites reporting for each measurement period: For each point on the graph, the total number of sites included in the aggregated measure should be presented.

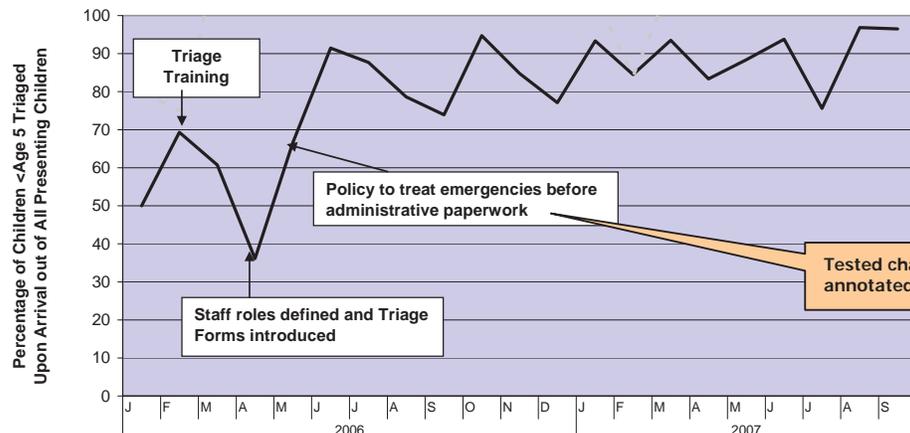
Examples of Presentation Norms

Shown below are examples of presentation norms for five types of graphs: (1) Percentage indicator for 1 site or QI team; (2) Count indicator (multiple teams, but un-aggregated data); (3) Percentage indicator for aggregated data across multiple sites; (4) Percentage indicator for comparison of multiple groups; and (5) Use of multiple indicators on one graph.

Example 1: Presentation Norms using % Indicator for One Site or QI Team

Well-defined title that includes what is presented, where, and when

Increasing Triage of Children <5 upon Arrival at Kollo Hospital, Niger (2006-2007)



Y- and X-axes have clear "scale" and includes indicator "label"

Denominator values shown for each month

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
	2006												2007								
— % of children <5 triaged at arrival	50	69	61	36	67	91	88	79	74	95	85	77	93	85	94	83	88	94	76	97	96
— # of children <5 coming to the hospital	80	75	112	119	150	164	130	159	184	170	177	131	105	84	108	120	112	160	623	256	114
— # of children <5 triaged (U,P,NP) at arrival	40	52	68	43	100	150	114	125	136	161	150	101	98	71	101	100	99	150	471	248	110

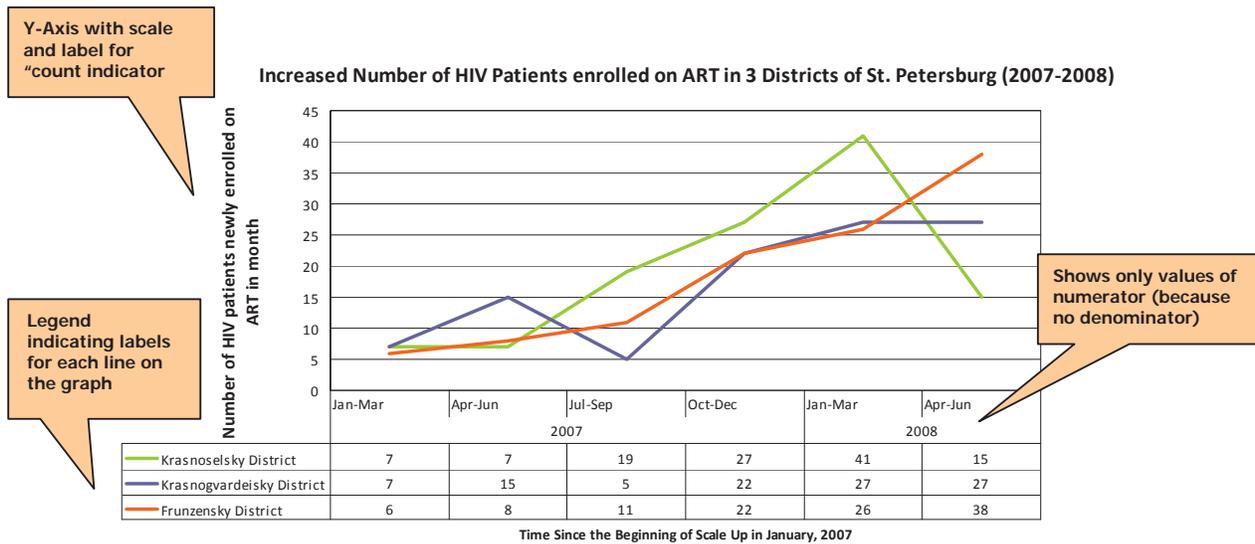
Numerator Definition: number of children <5 years of age who were triaged monthly U=urgent, P=priority, NP=not priority [Source: *Triage forms*]

Denominator Definition: number of children <5 years of age that arrived for a consultation at the hospital [Source: *Hospital Register*]

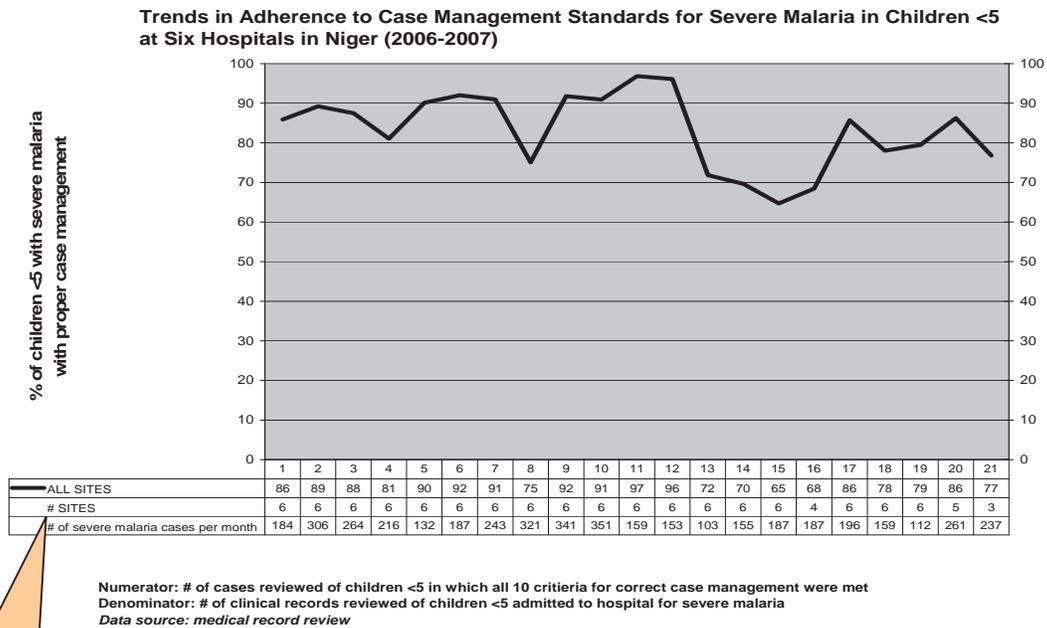
Sampling Strategy --> data are not a sample.

Numerator and denominator definitions are provided, including information on data source and sampling strategy

Example 2: Presentation Norms using Count Indicator and Multiple Sites



Example 3: Presentation Norms using % Indicator for Aggregated Data across Multiple Sites or QI Teams



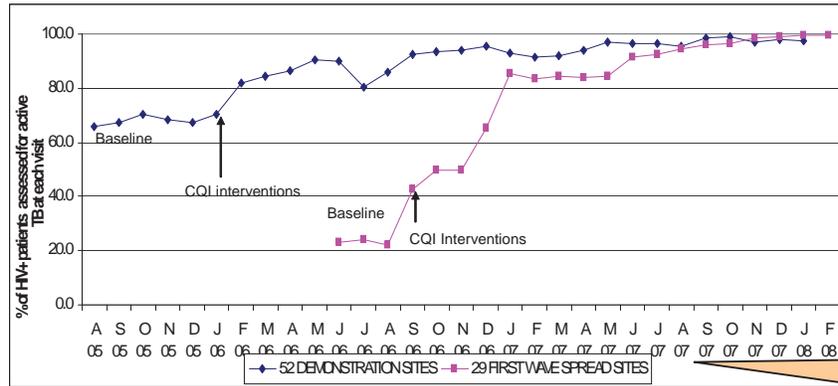
Example 4: Presentation Norms using Percent Indicator for Comparison of Multiple Groups

Comparison of original and spread sites for active TB screening of HIV+ patients – Uganda 2005-2008

average of 17,500 HIV+ patients per month in original sites; 5,000 in spread sites

Notes average sample size of denominator

Identifies multiple groups under comparison



Uses a legend to note trends for two QI groups

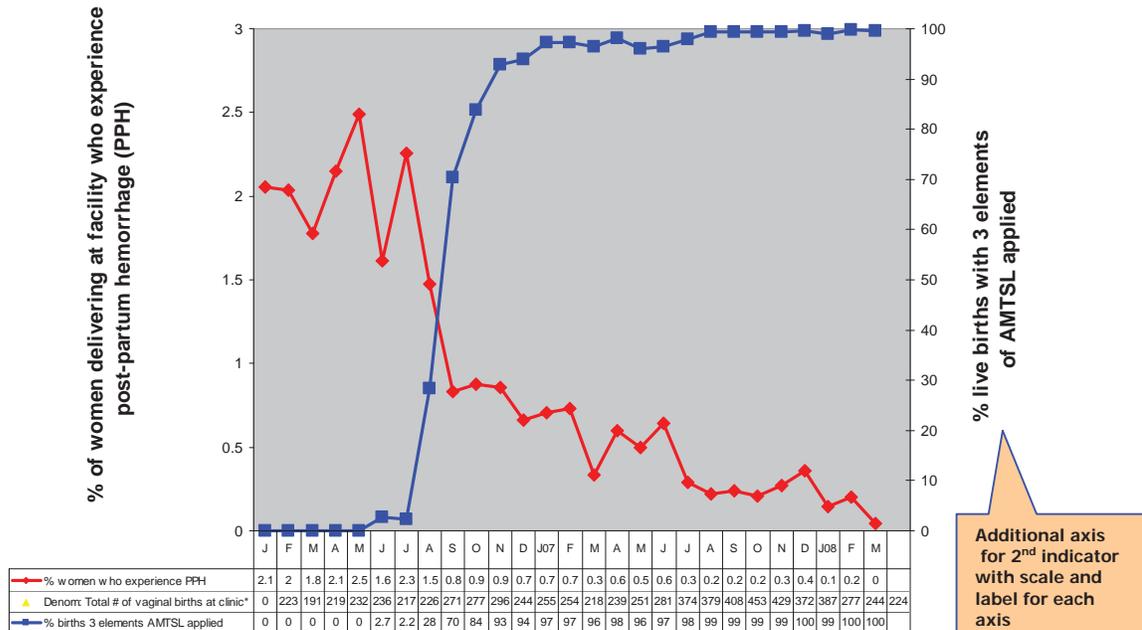
% of HIV+ patients seen in that month that were screened for active TB, based on Patient register

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Example 5: Presentation Norms using Multiple Indicators on a Single Graph

AMTSL Coverage and Post-partum Hemorrhage Rates EONC Maternities January 2006 - April 2008.

Total # of births: 28,937 in 2006 in 28 facilities; 40,510 in 2007 in 33 facilities; 11,589 from Jan-Apr 2008 in 33 facilities



Additional axis for 2nd indicator with scale and label for each axis

Numerator: # of women with live births at maternity who experience post-partum hemorrhage; # women with live births at maternity who receive oxytocin 1 minutes after delivery, controlled cord traction and uterine massage; Denominator: (identical for both indicators) # women delivering a live birth at the maternity
Data Source: Partograph Sampling: all women delivering at facility during month