

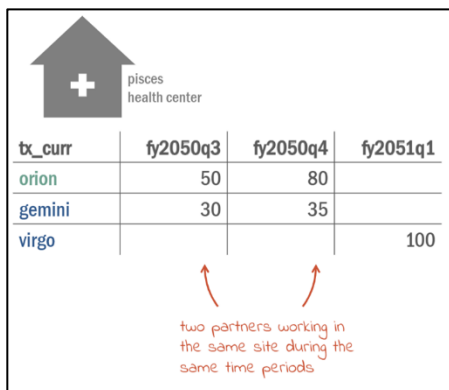
# Calculations Across Time User Guide

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## Summary

The Calculations Across Time Project works to better understand programmatic shifts between mechanisms, specifically those that impact calculated indicators such as TX\_NET\_NEW, Viral Load Coverage, and Viral Load Testing Gap.



tx_curr	fy2050q3	fy2050q4	fy2051q1
orion	50	80	
gemini	30	35	
virgo			100

two partners working in the same site during the same time periods

Due to PEPFAR programming, mechanisms are frequently replaced by other mechanisms. This can create inaccurate comparisons when using two different time periods in a calculated indicator.

From one time period to the other:

- Sites can begin or stop reporting on an indicator
- Mechanisms can be replaced by other mechanisms/partners (see [Mechanism Change Code](#))
- Disaggregates can change

## Mechanism Change Code

Between periods, a site may experience one of multiple types of Mechanism changes. The Mechanism Change Code (also referred to as “flag”) indicates the type of Mechanism change that occurred within a period. The type of Mechanism change code impacts whether a site can be used to calculate a metric across time. These change codes can be found in the MER Structured Datasets (MSDs) for Lag1 and Lag2 indicators for each quarter.

Change_Type_Code	Change Type Code Description	safe_for_net_new	safe_for_vlc
!	Invalid	N	N
?	Missing	N	N
~	Not Applicable	N	N
MM	Many to Many	N	N
MO	Many to One	N	N
MZ	Many to Zero (None)	N	N
OM	One to Many	N	N
ZM	Zero to Many	N	N
OO	One to One – No Mech Change	Y	Y
OOC	One to one – Changed Mech	Y	Y
OZ	One to Zero (None)	Y	Y
ZO	Zero (None) to One	Y	N

### Safe\_for\_Net\_New and Safe\_for\_VLC Columns:

These two columns should be used to indicate when the Calculations Across time principles can be applied for Net\_New and Viral Load Coverage (VLC) calculations. These columns follow the same logic as the above Mechanism Change Codes, but provide a simplified layout.

safe_for_net_new	safe_for_vlc
N	N
Y	N


- TX\_NET\_NEW\_SHIFT should only be analyzed when the *safe\_for\_net\_new* column is marked as "Y"
- Proxy Viral Load Coverage Shift should only be analyzed when the *safe\_for\_vlc* column is marked as "Y"

### TX\_NET\_NEW\_SHIFT:

Mechanism shift indicator (TX\_CURR\_LAG\_1 and TX\_CURR\_LAG\_2) flags allow for the creation of derived indicators to help calculated TX\_NET\_NEW\_SHIFT which takes these mechanism shifts into account.

$$TX\_NET\_NEW\_SHIFT = TX\_CURR_{Current\ Quarter} - TX\_CURR_{Previous\ Quarter}$$

$$TX\_NET\_NEW\_SHIFT = TX\_CURR_{Current\ Quarter} - TX\_CURR\_LAG1$$

 **Clinic Z** Site with One Mechanism changes to one new Mechanism in Quarter +1

indicator	standardized disaggregate	Mechanism	(next FY)			
			example Q4	example Q1	example Q2	example Q3
TX_CURR	Age/Sex/HIVStatus	leaf sky	13,600	13,700	13,970	14,000
TX_CURR_Lag1	Age/Sex/HIVStatus	leaf sky	13,750	13,600	13,700	13,970
TX_CURR_Lag2	Age/Sex/HIVStatus	leaf sky	13,000	13,750	13,600	13,700
TX_NET_NEW	Age/Sex/HIVStatus	leaf sky	(150)	(13,600)	270	30
TX_NET_NEW_SHIFT	Age/Sex/HIVStatus	leaf sky	(150)	100	270	30

Note: TX\_NET\_NEW\_SHIFT analysis should only be conducted for mechanism shifts with a [Change Type Code](#) of OO, OZ, ZO, or OOC

### Viral Load:

Proxy Viral Load (VL) Coverage (TX\_PVLS, D, current quarter/TX\_CURR, N, 2 quarters ago) and VL Testing Gap (TX\_CURR, N, 2 quarters ago - TX\_PVLS, D, current quarter) calculations both use data from two different time periods.

### To calculate VL Coverage Shift:

1. Utilize the *Site x IM-Shift* dataset
2. Identify the Site and IM combination you want to analyze
3. Calculate VL Coverage-Shift:  $VL\ Coverage\ Shift = \frac{TX\_PVLS\_D\ (Current\ Quarter)}{TX\_CURR\_LAG2}$

**To calculate VL Testing Gap Shift:**

1. Utilize the *Site x IM-Shift* Dataset
2. Identify the Site and IM Combination you want to analyze
  - a. Calculate VL Testing Gap Shift:  $VL\ Testing\ Gap\ Shift = TX\_CURR\_LAG2 - TX\_PVLS\_D\ (Current\ Quarter)$

Where is this data available?

- **MER Structured Datasets (MSDs)** – Calculations across time indicators are available in the SitexIM, PSNUxIM, and OUXIM MSDs. These datasets will include TX\_CURR\_LAG1, TX\_CURR\_LAG2, and TX\_NET\_NEW\_SHIFT, in addition to the Safe\_for\_net\_new and Safe\_for\_VLC Columns.
- **MER Site x IM - SHIFT** – ICPI saved dataset that includes Calculations Across Time indicators, in addition to the Mechanism Change Type for each quarter for Lag1 and Lag2. See the [Mechanism Change Type Table](#) for more information.
  - Please note that the **MER Site x IM – SHIFT** dataset will be retired in FY24Q1

Definitions and References:

**TX\_CURR\_Lag1:** Moves the TX\_CURR MER Result value forward by 1 quarter given the same site. Most sites have no mechanism change. If the site only had one partner/mechanism and changes to one new partner/mechanism, the TX\_CURR\_Lag1 value will have the prior quarter’s TX\_CURR value but will have the NEW partner/mechanism. For scenarios where there are many mechanisms before/after, the old mechanism is carried forward. Where there was a partner/mech and then support at that site stops, the “old” mechanism carries forward.

**TX\_CURR\_Lag2:** Similar to TX\_CURR\_Lag1, “Lag2” moves the TX\_CURR MER Result value forward by 2 quarters given the same site. If the site only had one partner/mechanism and changes to one new partner/mechanism, the TX\_CURR\_Lag2 value will have the two quarters ago TX\_CURR value but will have the NEW partner/mechanism value.

*This “interim” calculated indicator is primarily for VL Coverage and VL Testing Gap calculations.*

**TX\_NET\_NEW\_SHIFT:** TX\_CURR – TX\_CURR\_Lag1