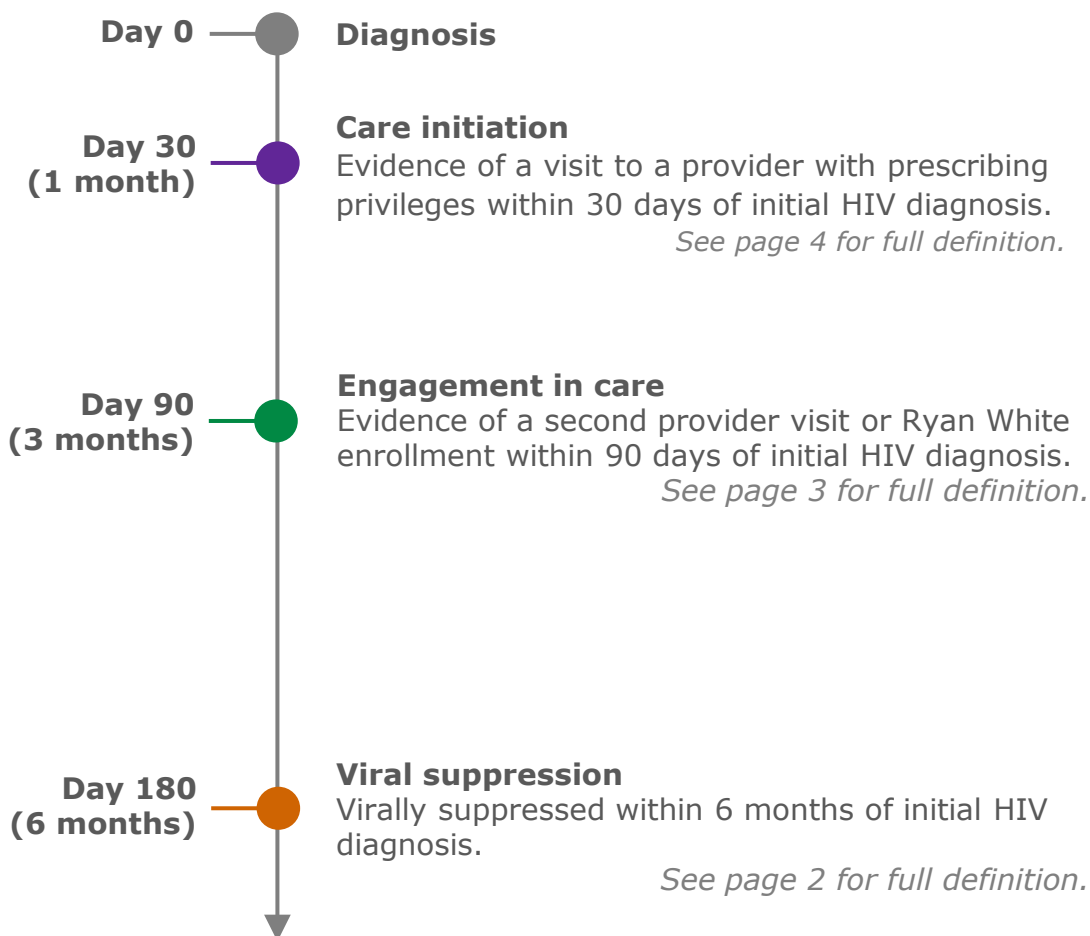


# Measuring Linkage to HIV Care

Entering HIV care and receiving antiretroviral (ARV) medication is the first step toward achieving viral suppression (VS: <200c/ml). Maintaining a suppressed viral load (VL) improves an individual's prognosis and prevents sexual transmissions ([undetectable = untransmittable or U=U](#)).

The Michigan Bureau of HIV and STI Programs (BHSP) has adopted the following three linkage measures which assess timeliness and success and provide context for programmatic discussions. **"Linkage to Care" refers to all three measures.**



Note: Unlike the Continuum of Care, the success of each measure does not depend on the previous one. For example, it is possible to achieve VS within six months of diagnosis without seeing a provider within 30 days. On average it takes one to three months to reach VS after starting ARVs.

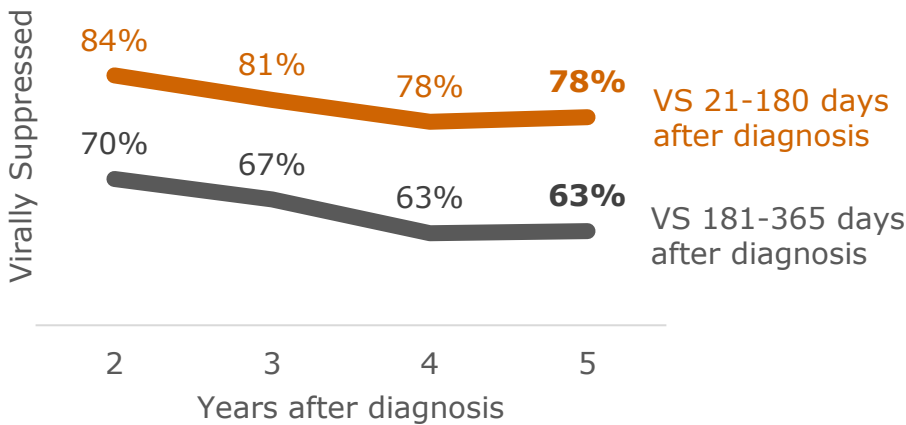
# Viral Suppression (6 months)

Because VS is the ultimate goal, details regarding each measure are easier to follow when described in reverse.



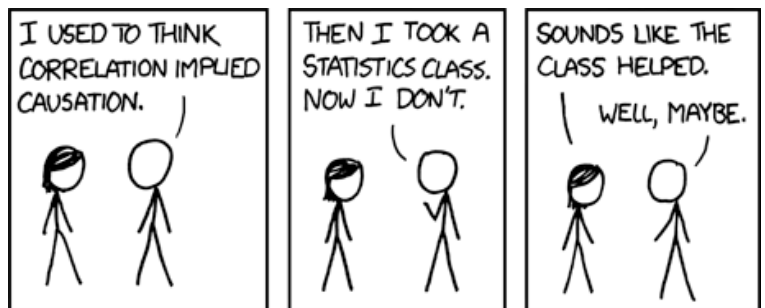
Once diagnosed, the primary goal is to establish persons with HIV (PWH) into care. Here, the proportion of persons VS two to five years following diagnosis serves as an indication of successful care establishment. Multiple time intervals\* were assessed and VS within six months of diagnosis was significantly associated with future VS. Therefore, the final linkage to care measure is **viral suppression** within six months (180 days) of initial diagnosis.

Persons VS within six months of diagnosis are more likely to be VS years later.



**How do I read this graph?**  
Of persons VS within six months of diagnosis (21-180 days), **78%** were VS five years later. That is significantly higher than the VS level (**63%**) of those who took 7-12 months to reach suppression.

Though suppression within six months and future VS are correlated, earlier VS does not *cause* future VS. Many of the structural factors that help or hinder suppression within six months will also impact future care outcomes. While VS within six months is the final linkage to care goal, it is the beginning of the life-long care journey. The factors that we, as public health professionals and providers, can influence should be maintained beyond these first six months.



xkcd.com

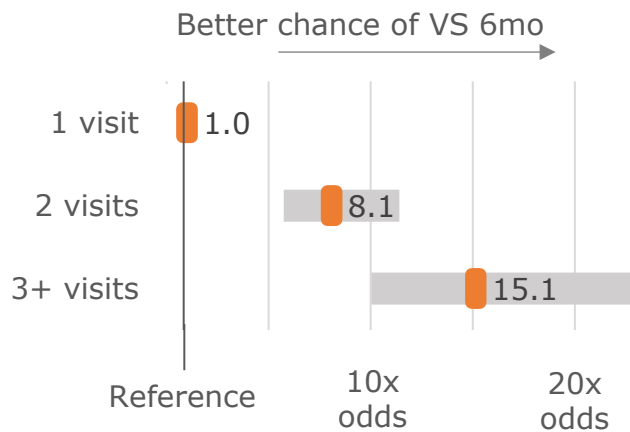
\*Intervals assessed (days): 21-30, 31-90, 91-180, 180-270, 271-365. Persons VS within 21 days were assumed to be previously diagnosed and excluded. Intervals within 21-180 days and 181-356 days yielded similar results and were combined.

# Engagement in Care (90 days)

Newly diagnosed persons are more likely to achieve VS within six months if they receive:

## Multiple medical visits\* in 90 days

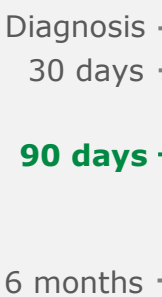
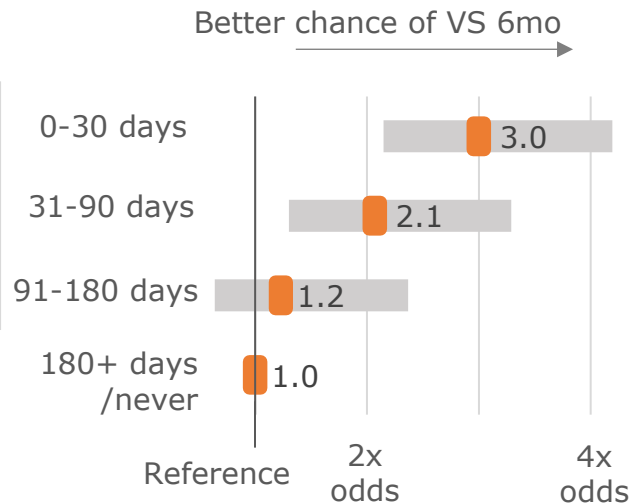
Two visits octuple the odds of VS in six months compared to only one visit.



\*defined by the presence of a CD4 or vl lab

## Ryan White enrollment in 90 days

Enrolling in Ryan White within 30 days triples the odds of VS in six months.



These are both actionable, impactful factors combined to define **Engagement in Care**: evidence of a second provider visit or Ryan White enrollment within 90 days of initial HIV diagnosis.

## What are the grey bars on those graphs?

Each orange marker is the estimated impact each scenario has on the odds of VS in six months, but it's only an estimate. We're 95% sure the true impact is within the range shown by the grey bars, so when the grey bar doesn't cross the comparison group line, we're 95% sure that scenario is truly better.

Other factors associated with VS in six months may help prioritize populations most in need of assistance. Lower odds of VS in six months were associated with individuals who

- Could not be located by Partner Services.
- Were diagnosed as early or late-stage.
- Were diagnosed in an emergency department, infectious disease clinic, or inpatient hospital setting.

Additionally, Black and Hispanic/Latinx persons had nearly significant lower odds of reaching VS in six months compared to white persons. Receiving two or more medical visits or enrolling in Ryan White in 90 days lessened the racial disparities.

# Care Initiation (30 days)



**Care initiation:** Evidence of a visit to a provider with prescribing privileges within 30 days of initial HIV diagnosis. This measure closely aligns with the national standard but adds nuance that is helpful for programmatic activities.

*"I had a person connect me with services immediately after being diagnosed. I think if there was a break, I probably would have hesitated to get the help on my own."*

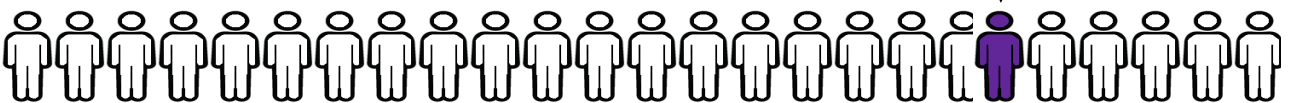
- SEMHAC Needs Assessment participant

## How does Michigan define 30-day care initiation, and how does it differ from CDC's 30-day care linkage measure?

At least one of the following are met:	MI: 30-day care initiation	CDC: 30-day care linkage	
CD4 or vl on the day of diagnosis	Only if both are present	One or both accepted	Mandatory lab reporting enables CDC to ensure a standard, measurable definition across states.
CD4 or vl 1-30 days following diagnosis	X	X	
Evidence of an ARV prescription for the purpose of treating HIV	X		Helps distinguish HIV care from diagnosing processes.
Documented medical visit	X		

Defined by: Initial case report, electronic medical records, Ryan White records, Medicaid claims, and Partner Services.

Both measures give nearly identical results at the state level. Success of 30-day care initiation only differs from CDC's 30-day care linkage for 1 in 25 newly diagnosed persons in Michigan.



### If the difference is so small, why not use the simpler CDC measure?

Differences increase as populations are stratified to actionable groups such as facility of diagnosis. Using this single measure for epidemiologic reports as well as activities avoids confusion and supports data-driven programming.

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