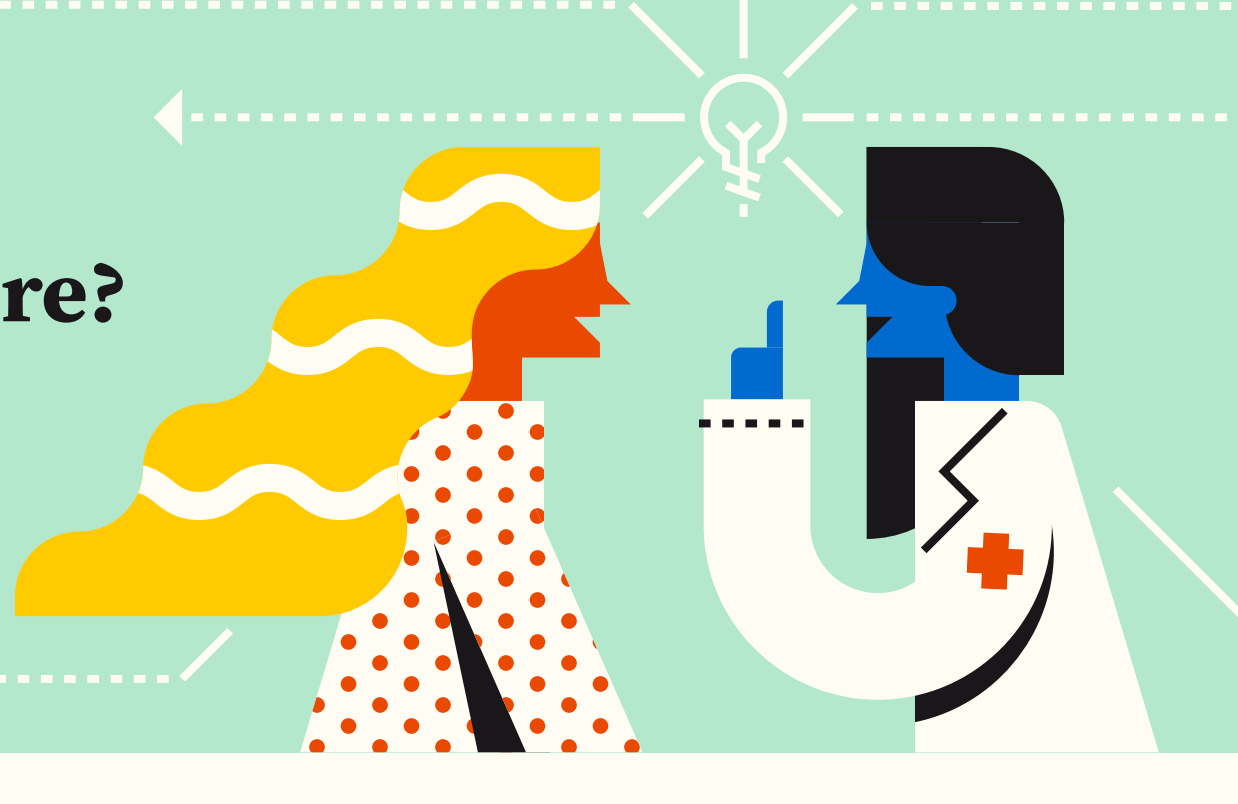




# Who is the HIV+ Patient of the Future?

Demographic projections indicate the US population of diagnosed HIV+ patients will grow consistently to over 1.2M by 2045.



## Recent demographic research & modeling indicates that the US HIV+ population will experience two key shifts:

**32%**

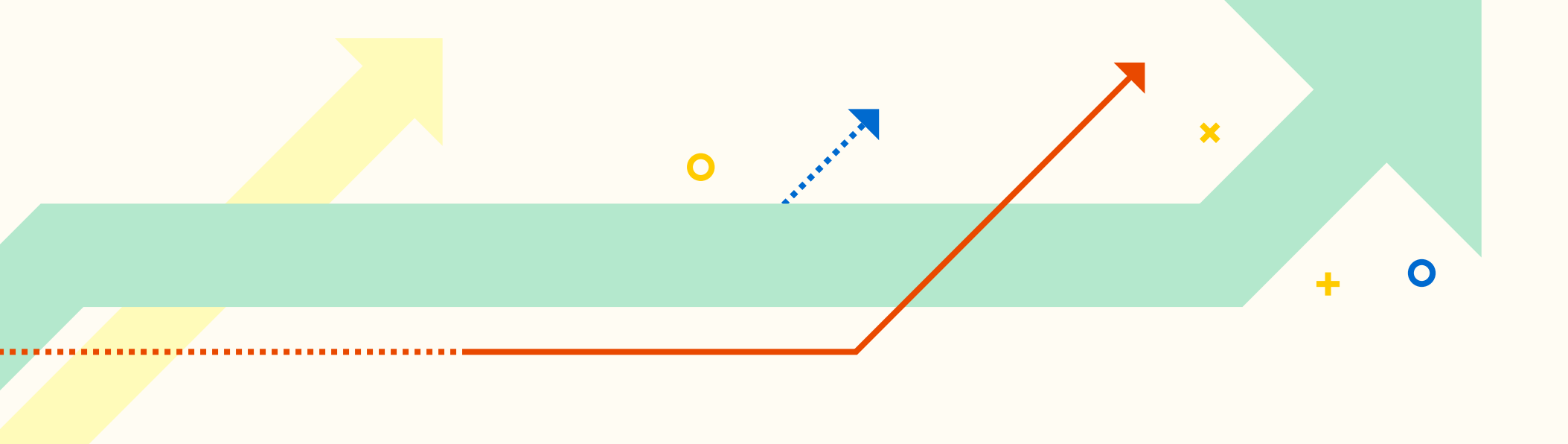
**The most significant racial demographic shift will occur within the Latino population: It will expand by 60% to be 32% of the total US diagnosed HIV+ population by 2045.**

This increase roughly tracks—but outpaces—with the trend within the general US population, and is driven largely by immigration.

**38%**

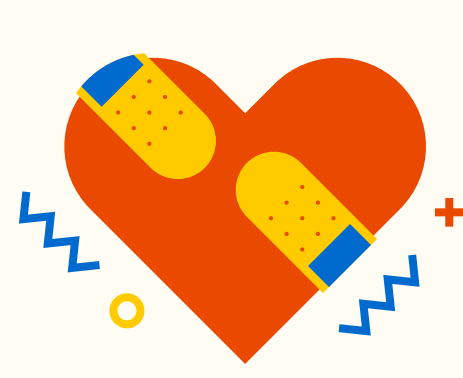
**The most significant trend overall is related to aging: the diagnosed HIV+ population 55 yrs and older will increase sharply from 25% in 2013 to 38% by 2025.**

The total number of patients 55 yrs and older will double between 2013 and 2045.



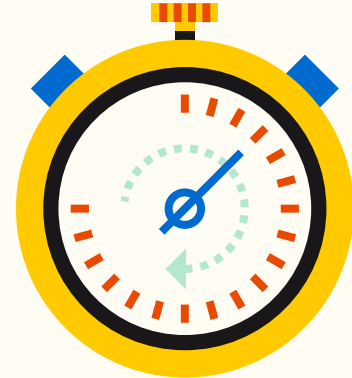
## HIV care will continue to look like more like primary care—and managing comorbidities will be a focus of clinic visits.

Thanks to effective ART, HIV+ patients now live long, healthy lives. But with aging patients comes a higher likelihood of having to manage the presence of multiple chronic conditions. Here are some examples of how this affects HIV patients:



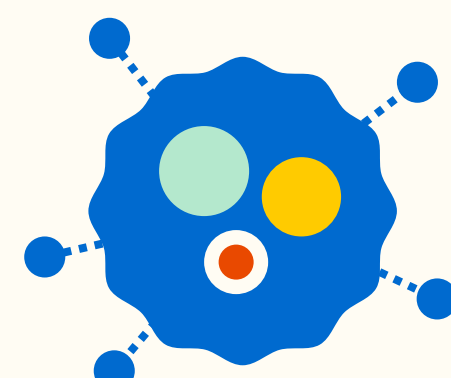
### CARDIAC HEALTH

Patients 55 yrs and older with HIV are 1.5 times more likely to have a heart attack and certain ART medications increase the risk.



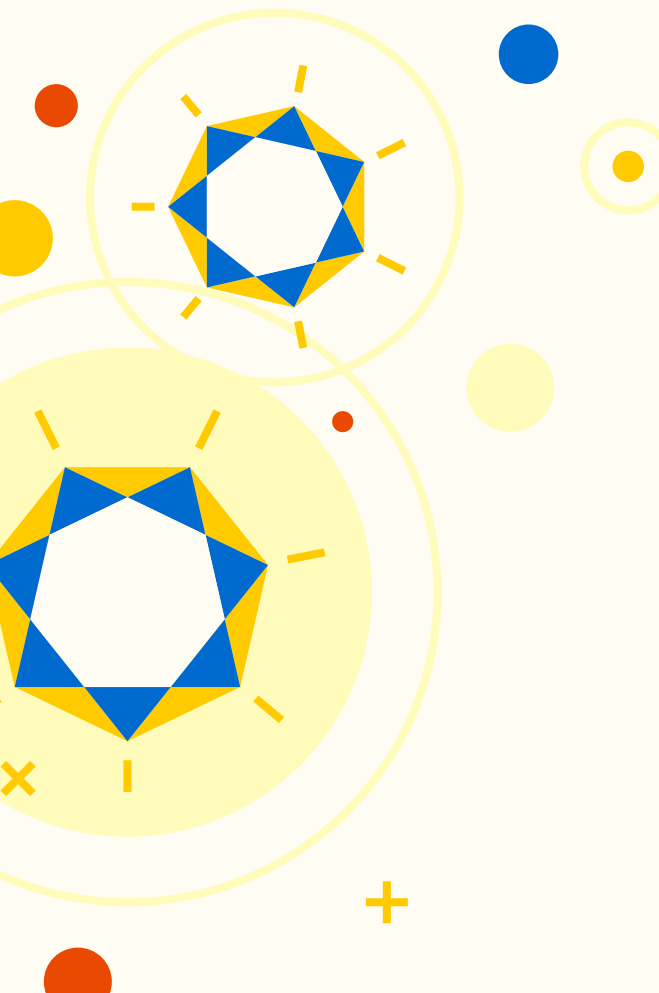
### ACCELERATED AGING

HIV+ patients over 55 are 3X more susceptible to bone fractures than their uninfected counterparts. An HIV+ patient 50 yrs old experiences a comparable level of frailty and age associated inflammation (or inflammaging) as a 65+ person who is not infected.



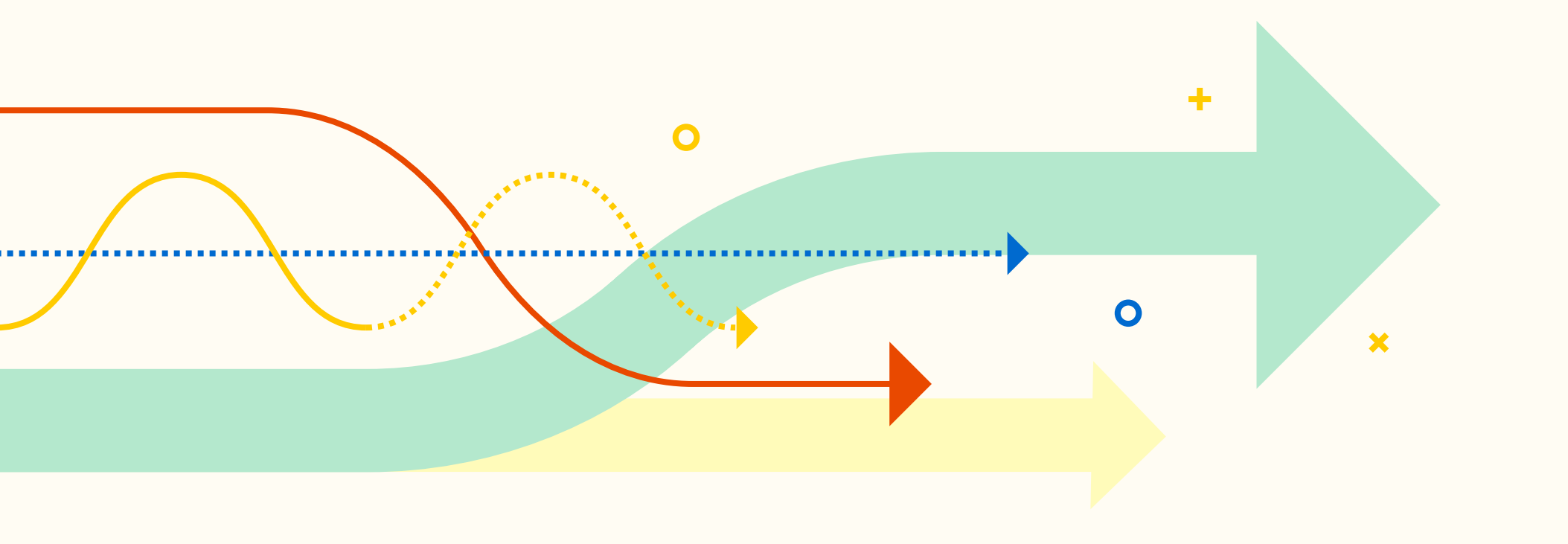
### CANCER

AIDS defining cancers (like Kaposi Sarcoma) will continue to decline precipitously due to ART, but non-AIDS defining cancers will increase slightly for people who are HIV+. Overall, though, the cancer rate is expected to decrease and become more similar to the HIV- population.



### TOP COMORBIDITIES THAT HIV PROVIDERS ARE LIKELY TO ENCOUNTER:

- |                           |                          |
|---------------------------|--------------------------|
| Mental health             | Bone abnormality/frailty |
| Substance abuse disorders | Renal/liver              |
| Diabetes                  | Malignancies             |
| Hypertension              | Neuro cognitive          |
| Cardiovascular disease    |                          |



## These demographic shifts suggest three focus areas:

### Serving the needs of immigrant populations

Immigrant populations are likely to be undocumented and less likely to be fluent in English, presenting challenges for linking them to care. In addition, immigrant populations may have less access and fluency with technology, so digital health solutions need to be carefully designed and tested.



### Helping patients manage medications associated with multiple conditions

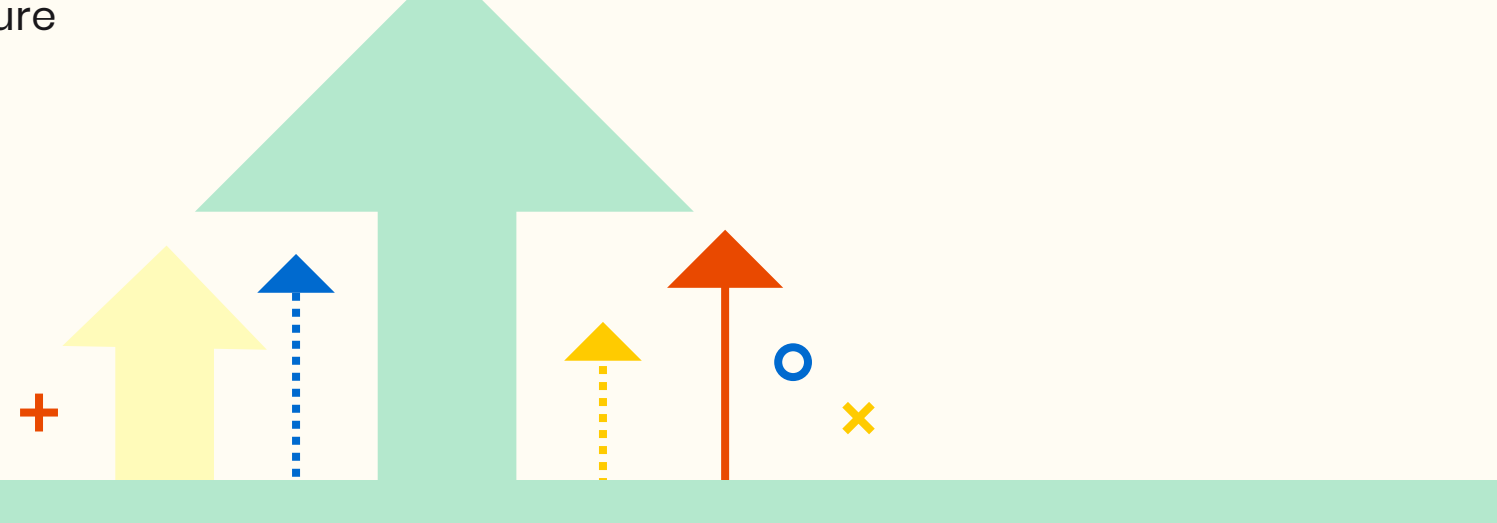
The growing population of older patients will rely on AHF clinics to provide expertise on drug-to-drug interactions, along with an understanding of how ART may affect other chronic conditions.



### Helping older individuals know their status

In 2016, 18% of newly diagnosed HIV cases were among adults 50 yrs and older. Regular STI testing is not currently recommended for this population, often allowing more time to elapse post transmission, resulting in a more advanced disease at diagnosis.

Faster diagnosis through more consistent screening of individuals 50 yrs and older will prevent the advancement of disease among those infected and reduce future transmission.



**We relied on a number of sources for this analysis. A complete list is contained within a separate, annotated bibliography. However, a few sources were key to this research:**

Guardigni, V., and M. Montano. "The Demographic Shift in HIV: The Aging HIV Patient." *Infectious Disease Special Edition Fall 2018*(2018).

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Shiels, M. S., J. Y. Islam, P. S. Rosenberg, H. I. Hall, E. Jacobson, and E. A. Engels. "Projected Cancer Incidence Rates and Burden of Incident Cancer Cases in HIV-Infected Adults in the United States through 2030." *Ann Intern Med 168*, no. 12 (Jun 19 2018): 866-73.

Smit, Mikaela, Kees Brinkman, Suzanne Geerlings,

Colette Smit, Kalyani Thyagarajan, Ard van Sighem, Frank de Wolf, and Timothy B. Hallett. "Future Challenges for Clinical Care of an Ageing Population Infected with HIV: A Modelling Study." *The Lancet Infectious Diseases 15*, no. 7 (2015): 810-18.

Vance, David E., and Shameka L. Cody. "Predictions of Geriatric HIV in 2030." *The Lancet Infectious Diseases 15*, no. 7 (2015): 753-54.

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**Note:** The projections cited in this summary are for *diagnosed* persons living with HIV, rather than *all* persons with HIV. This distinction is important because, as of June 2019, the CDC estimates that 1 in 7 persons with HIV in the United States are not aware of their status. Our findings are based on number of *diagnosed* persons because the projection models we cited use this metric rather than total number of persons living with HIV.