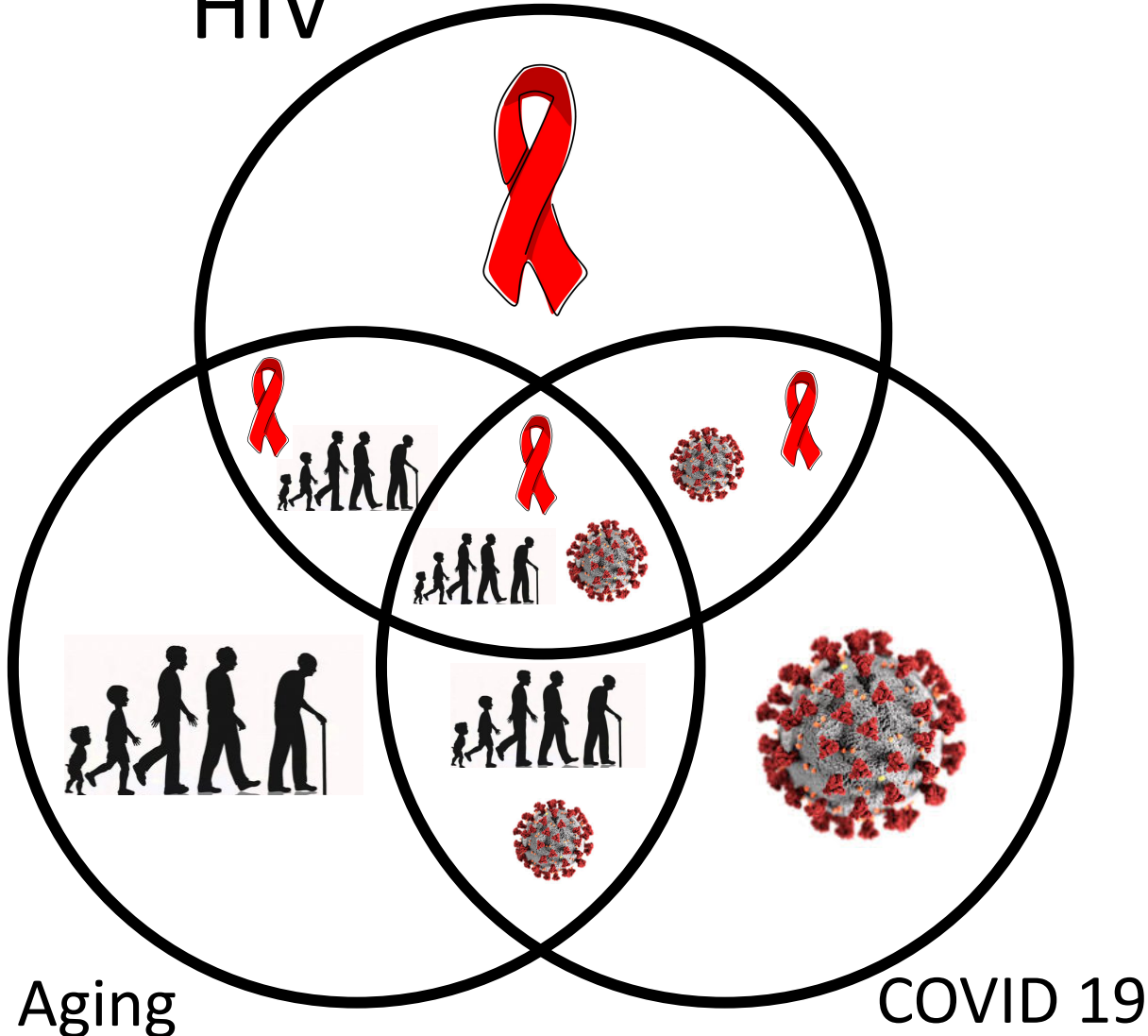


HIV



# HIV, Aging, and COVID-19

## Intersecting Pandemics

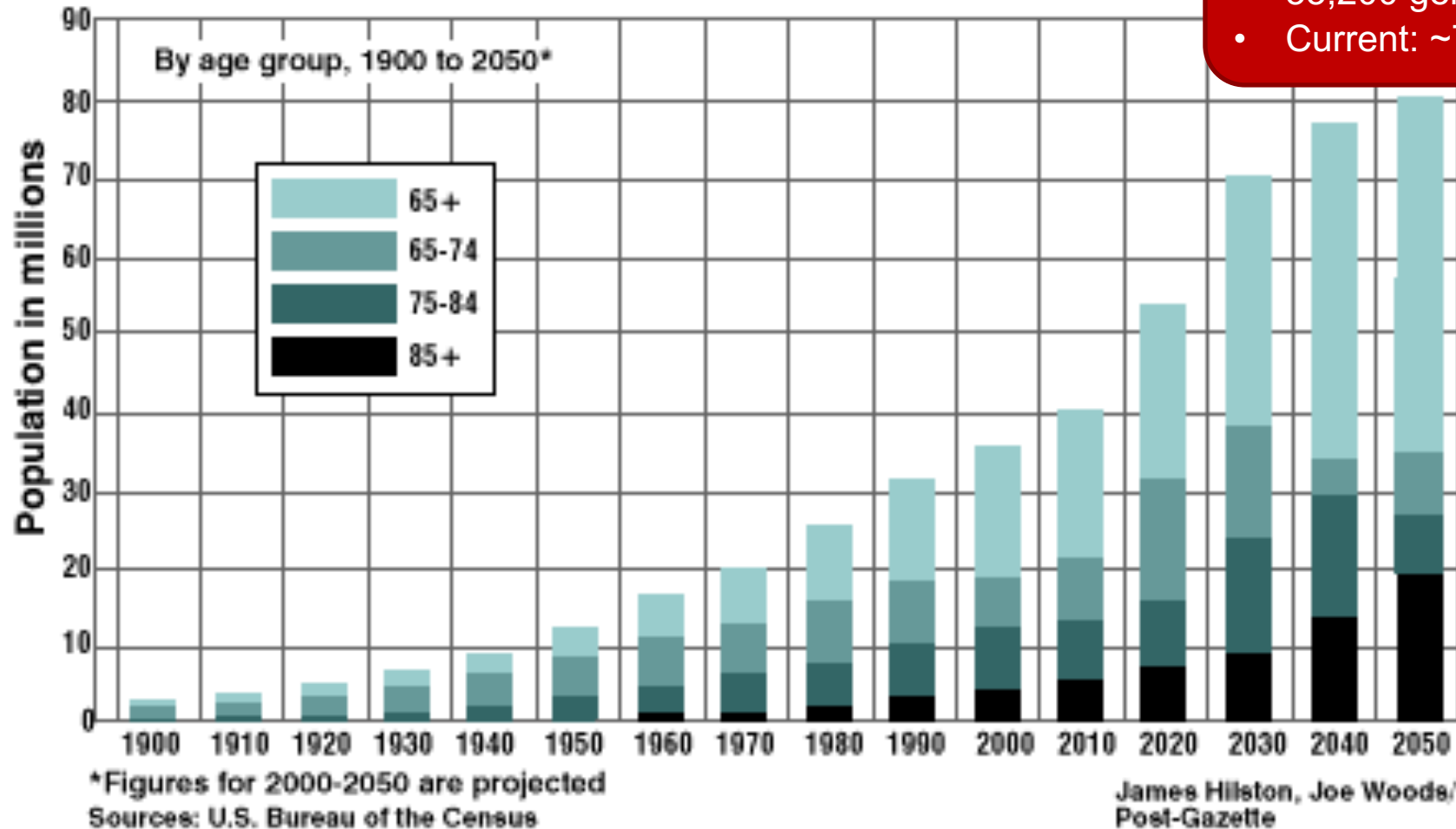
Sarah Schmalzle MD, FIDSA  
[sschmalzle@ihv.umaryland.edu](mailto:sschmalzle@ihv.umaryland.edu)  
February 21, 2023

# Disclosures



# Epidemiology: Aging

## Growth of the nation's 65+ population



### Geriatricians

- 30% adults >65 need geriatrician
- 33,200 geriatricians needed 2025
- Current: ~7,000, ½ part time



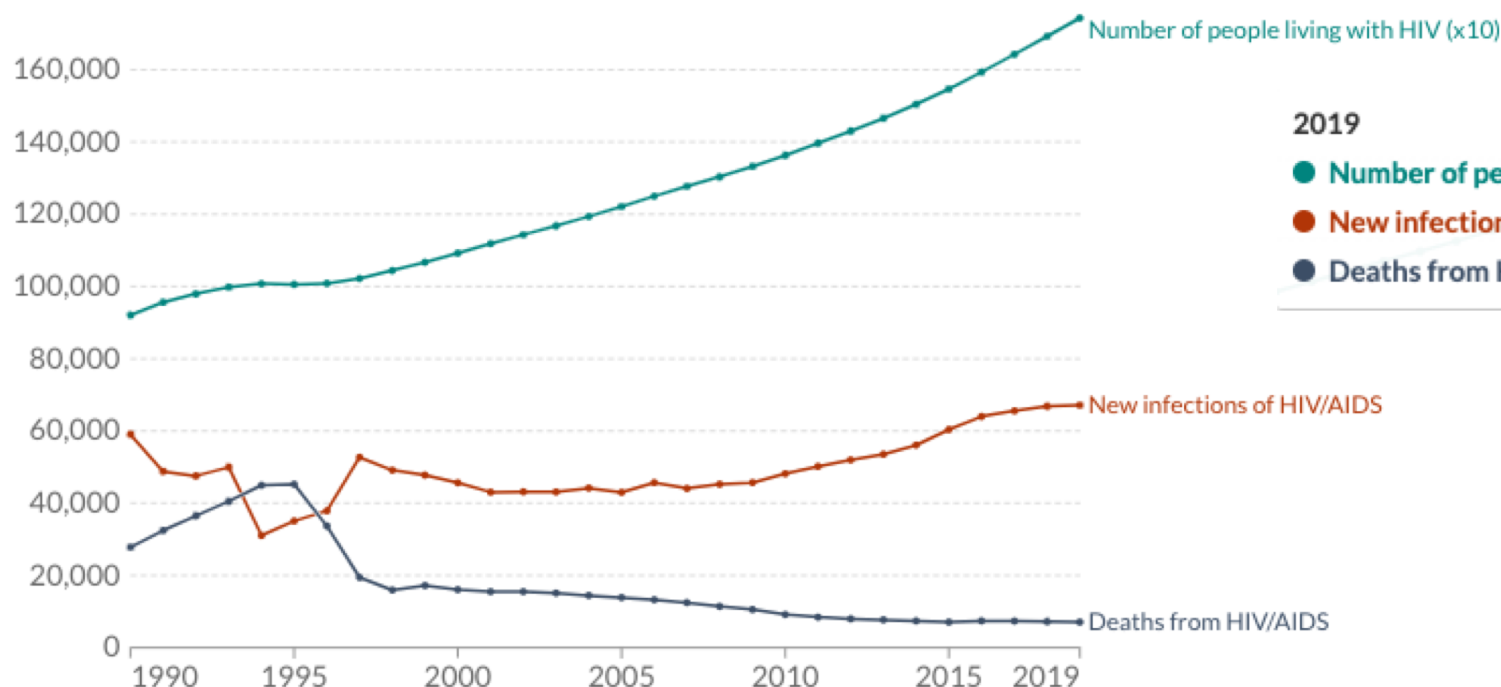
# Epidemiology: HIV

## Prevalence, new cases and deaths from HIV/AIDS, United States, 1990 to 2019

Our World  
in Data

To fit all three measures on the same visualization the total number of people living with HIV has been divided by ten (i.e. in 2017 there were 37 million people living with HIV).

[↔ Change country](#)



2019

● Number of people living with HIV (x10)	174,313
● New infections of HIV/AIDS	67,134
● Deaths from HIV/AIDS	7,053

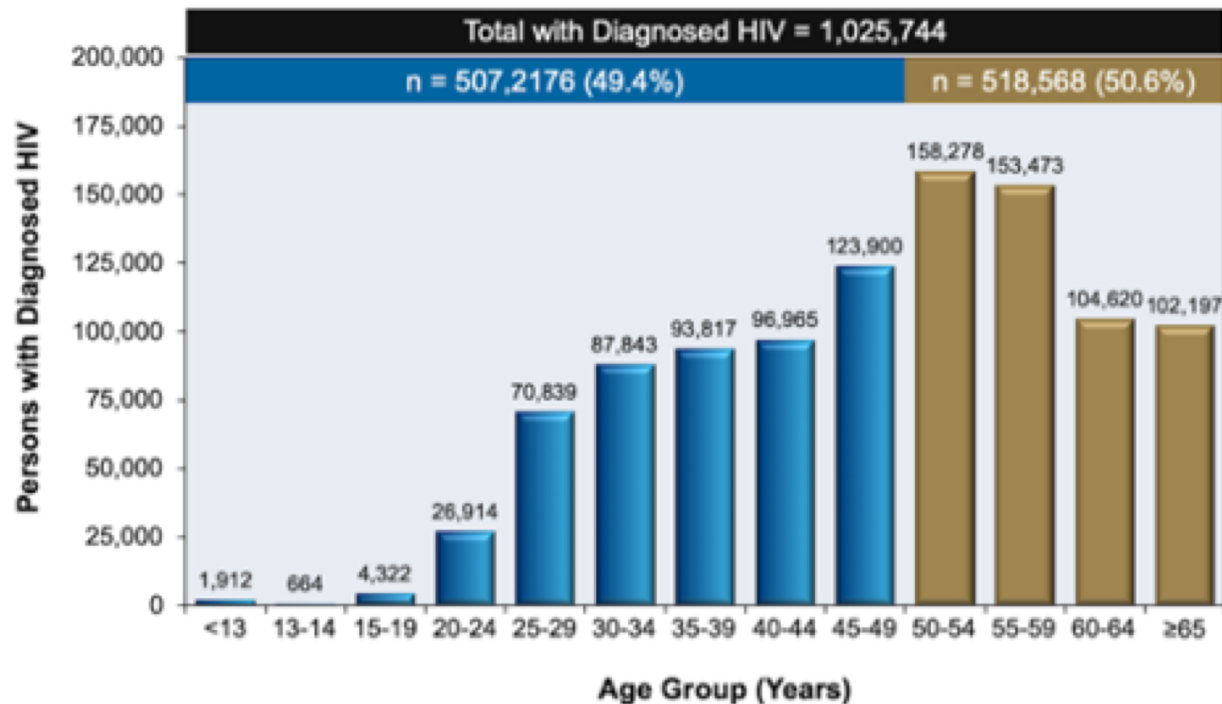
Source: IHME, Global Burden of Disease

CC BY

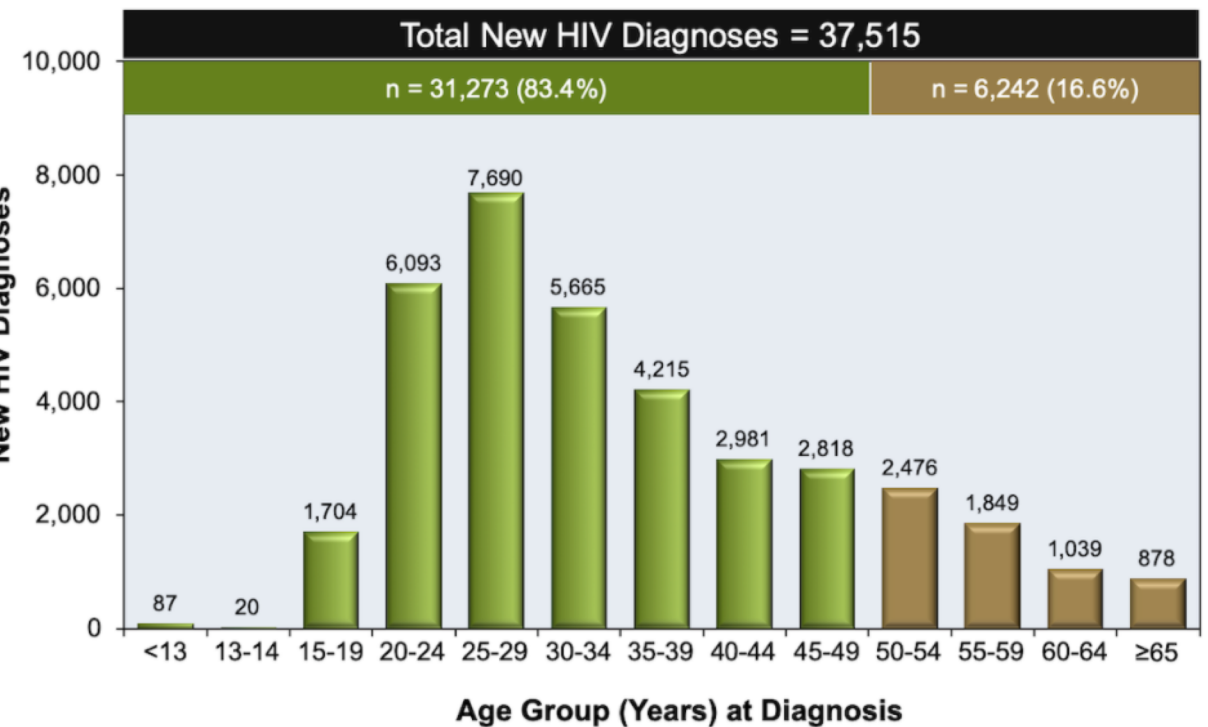




# Intersection: HIV and Aging



2018: >50% PLWH are >50

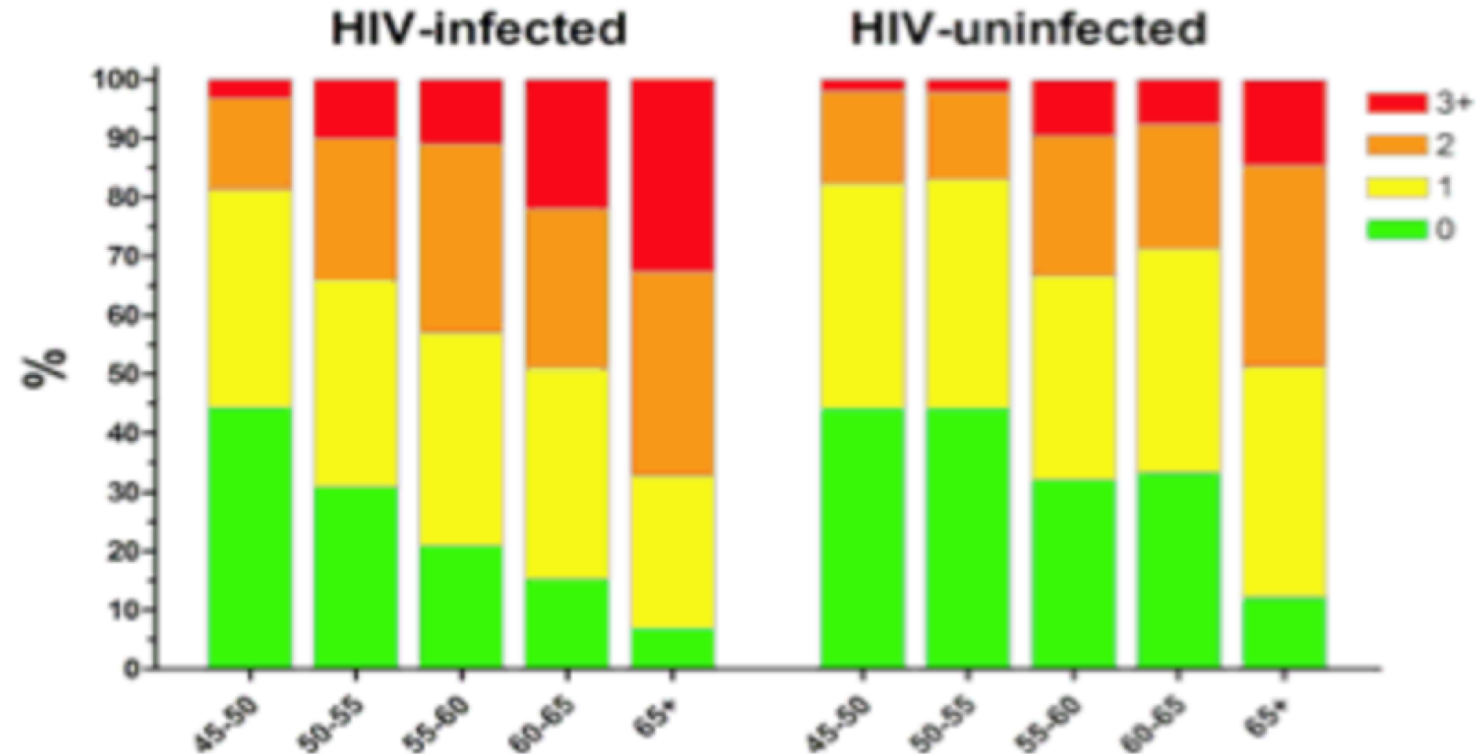


16.6% of new diagnoses are >50



# Intersection: HIV, Aging, Comorbidity and Multi-morbidity

- Cardiovascular disease: HTN, CHD, AMI, CHF, A fib, PAD, CVA
- Low bone mineral density, osteonecrosis
- Renal disease
- Liver disease
- Diabetes
- Cancers
  - AIDS defining: non-Hodgkin lymphoma, Kaposi sarcoma, cervical
  - Non-AIDS defining: Hodgkin lymphoma, lung, liver, anal, oral/pharynx
- Neurocognitive deficits
- Frailty



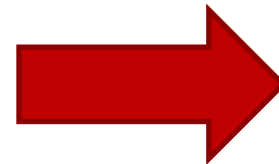
Freiberg. JAMA Intern Med. 2013;173(8):614-622.  
 Butt AA. Arch Intern Med 2011.  
 Hsu JC. J Am Coll Cardiol 2013.  
 National Cancer Institute. HIV Infection and Cancer Risk

Islam FM. HIV Medicine 2012.  
 Schouten. CID 2014;59(12):1787-97  
 Chow FC. JAIDS 2012.  
 Falade-Nwulia O. Sex Health 2011;8(4):512-20



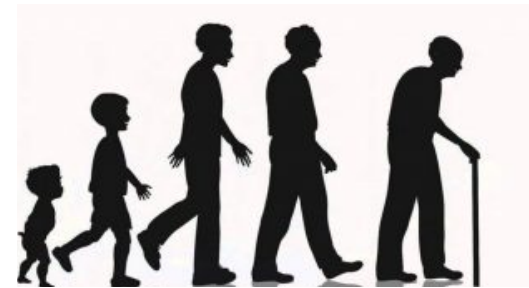
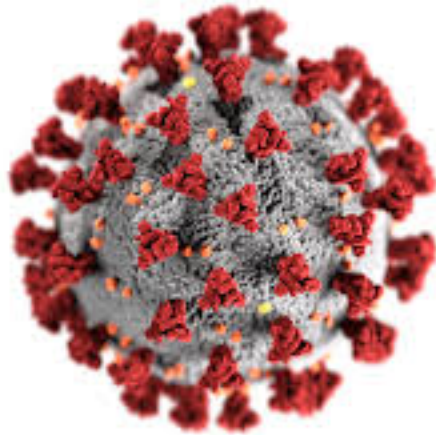
# Intersection: HIV, Social Isolation, and Loneliness

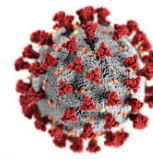
- > 1/2 depression
- ~ 1/3 other MH diagnosis
- > 1/2 lack social support
- ~ 1/3 to 1/2 loneliness or isolation
- > 1/2 daily substance use
- > 1/2 stigma/discrimination
  - ~ 1/4 ageism
  - ~ 1/4 homophobia



Depression  
Alcohol use  
Tobacco use  
Less relationships  
Lower QOL  
Higher costs (CVD, CVA)  
Mortality

# COVID-19 Outcomes Related to HIV (and aging and comorbidities in PLWH)



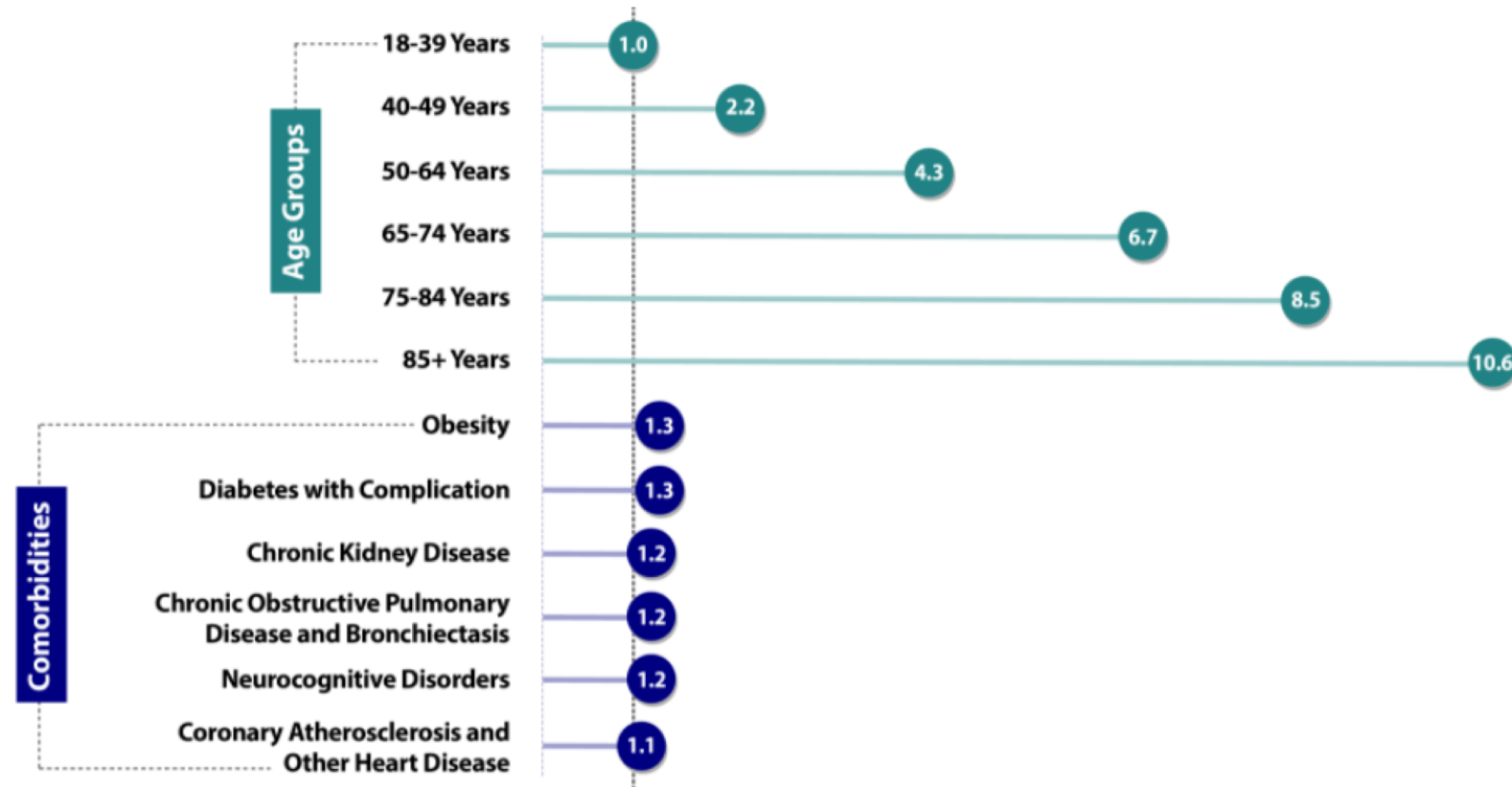


# Risk factors for poor COVID-19 outcomes

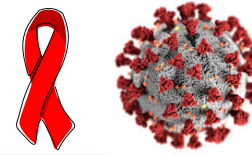
More prevalent in PWH?	
Race: Non-white	✓
Gender: Male	✓
Age: Increased	✓
Co-morbidities:	
Hypertension	✓
Diabetes (type 1, 2)	✓
Obesity, overweight	✓
CAD, CHF, CMP	✓
Cerebrovascular disease, dementia	✓
Renal disease	✓
Sickle cell disease, thalassemia	
Down Syndrome	
	Lung disease: COPD, asthma, cystic fibrosis, ILD, IPF ✓ Tobacco use ✓ Liver disease ✓ Mental illness, substance use ✓ Pregnancy SOT, BMT Cancer ✓



# COVID-19 and Age and Comorbidities



**COVID-19 Death Risk Ratio (RR) for  
Select **Age Groups** and **Comorbid Conditions****



# COVID-19 Outcomes in PLWH – WHO data

- 24 countries with HIV data (mostly US, S Africa)
- 168,649 hospitalized patients
- 15,222 HIV + (92% on ART)

## PLWH – Comorbidities:

- HTN 33%, Diabetes 23%, Obesity 16%
- TB 13%, CKD 12%, CLD 12%, smoking 9%

Assoc of HIV status  
w disease severity

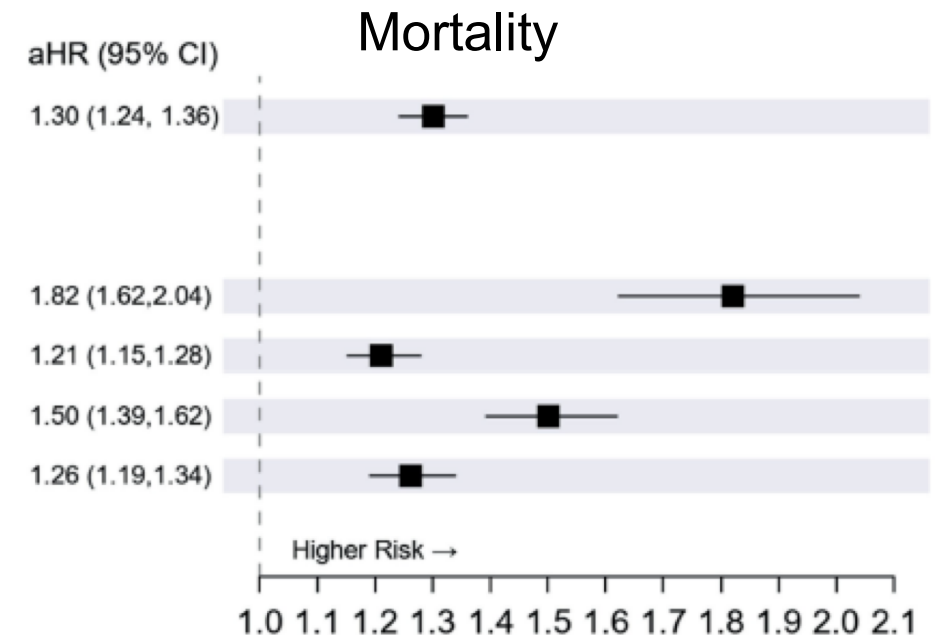
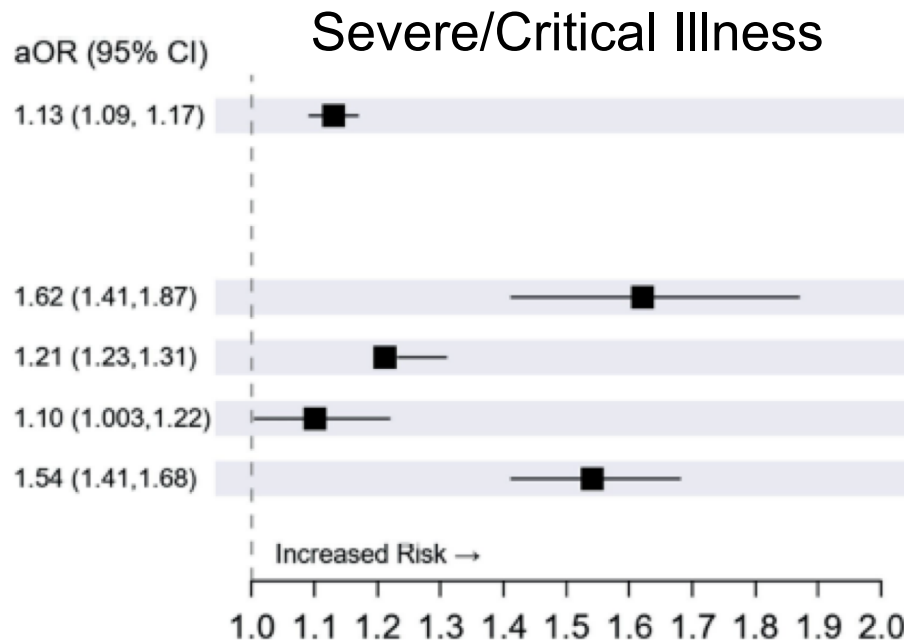
RFs for severe  
illness in PLWH

Age >65

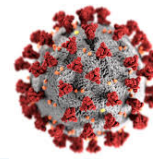
Male

DM

HTN





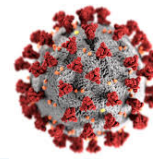


# COVID-19 Outcomes in PLWH – by CD4 and HIV VL

Outcome	Clinical Characteristics	Odds ratio (95% CI)	P value
Hospitalization	Age, years	1.04 (1.01–1.08)	.01
	CD4 count		
	<200 cells/mm <sup>3</sup>	5.22 (1.28–21.35)	.02
	200–500 cells/mm <sup>3</sup>	1.47 (.7–3.08)	.30
	>500 cells/mm <sup>3</sup>	1.00 (reference)	
	HIV with no other known comorbidity	1.00 (reference)	
	HIV with 1 or 2 comorbidities	1.19 (.56–2.55)	.65
	HIV with 3 or more comorbidities	4.56 (1.81–11.48)	<.01
Severe outcome <sup>a</sup>	Age, years	1.04 (1.01–1.07)	.02
	CD4 count		
	<200 cells/mm <sup>3</sup>	3.32 (1.11–9.93)	.03
	200–500 cells/mm <sup>3</sup>	1.75 (.76–4.02)	.19
	>500 cells/mm <sup>3</sup>	1.00 (reference)	
	HIV with no other known comorbidity	1.00 (reference)	
	HIV with 1 or 2 comorbidities	2.58 (.56–11.91)	.23
	HIV with 3 or more comorbidities	5.09 (1.05–24.76)	.04

286 HIV+ patients with COVID

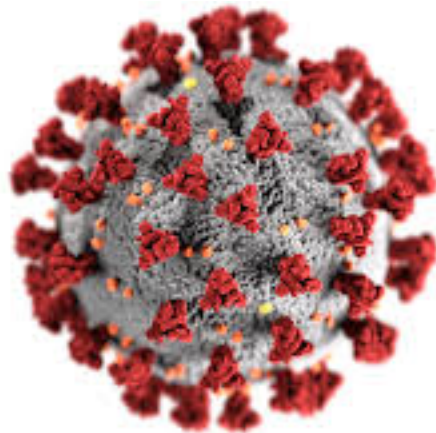


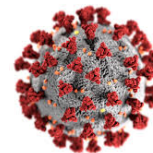


# Risk factors for poor response to public health measures

Poverty, food insecurity
Marginal employment
Low educational attainment
Social isolation
Loneliness
Lack of social support
Struggles with ADLs
Substance use
Mental illness
Incarceration

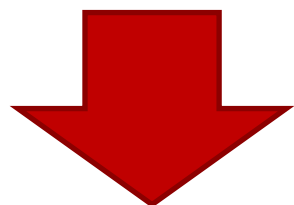
# Effect of COVID-19 Pandemic on HIV Care Delivery





# HIV Testing during COVID-19 Pandemic - US

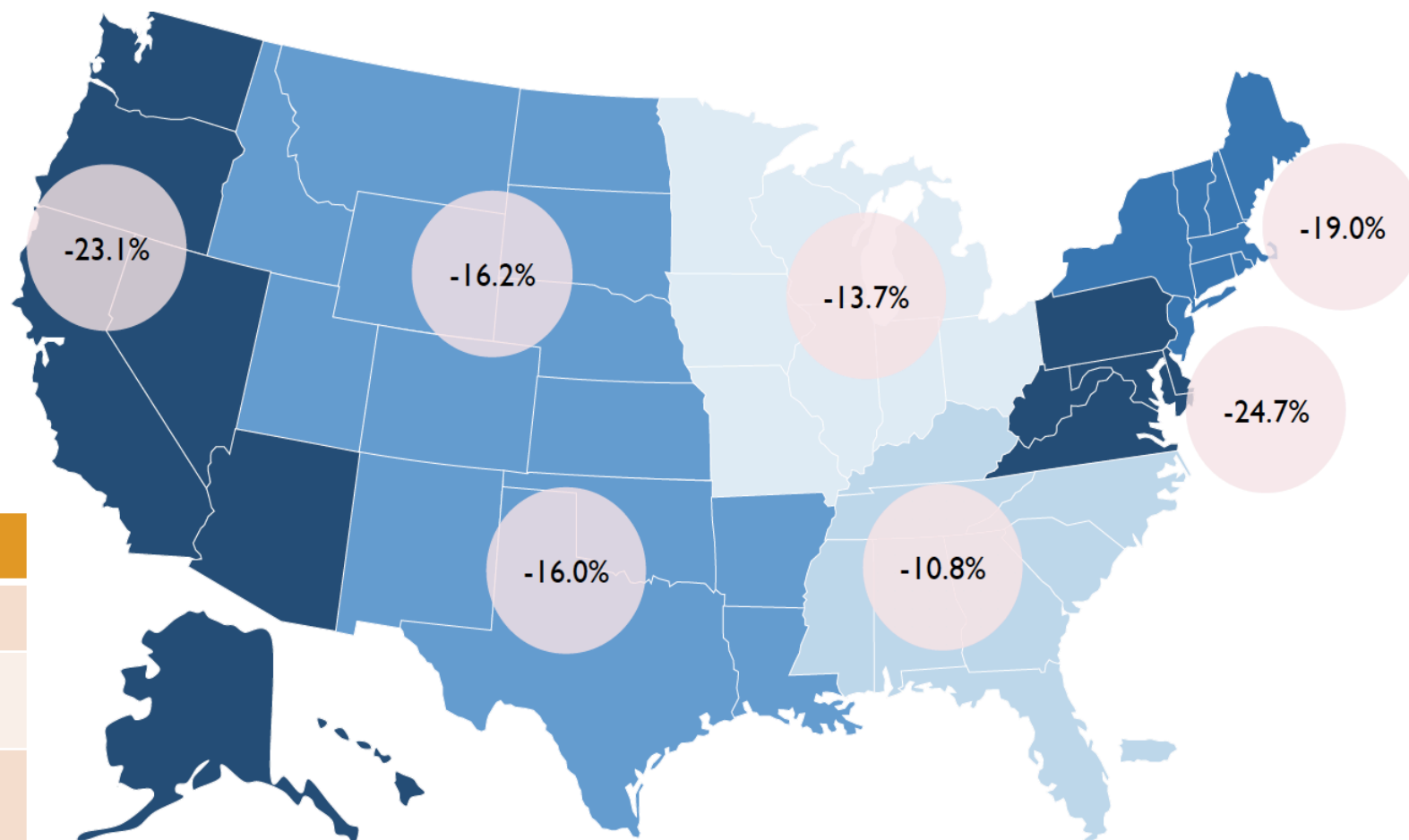
2019: 4.46M tests



17.5%  
drop

2020: 3.68M tests

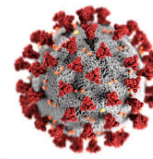
	2019	2020	% drop
ED (2 sites)	3868	3216	17%
Outpt (4 sites)	34281	23038	33%
Community (1 site)	2471	858	65%



Lowest decrease

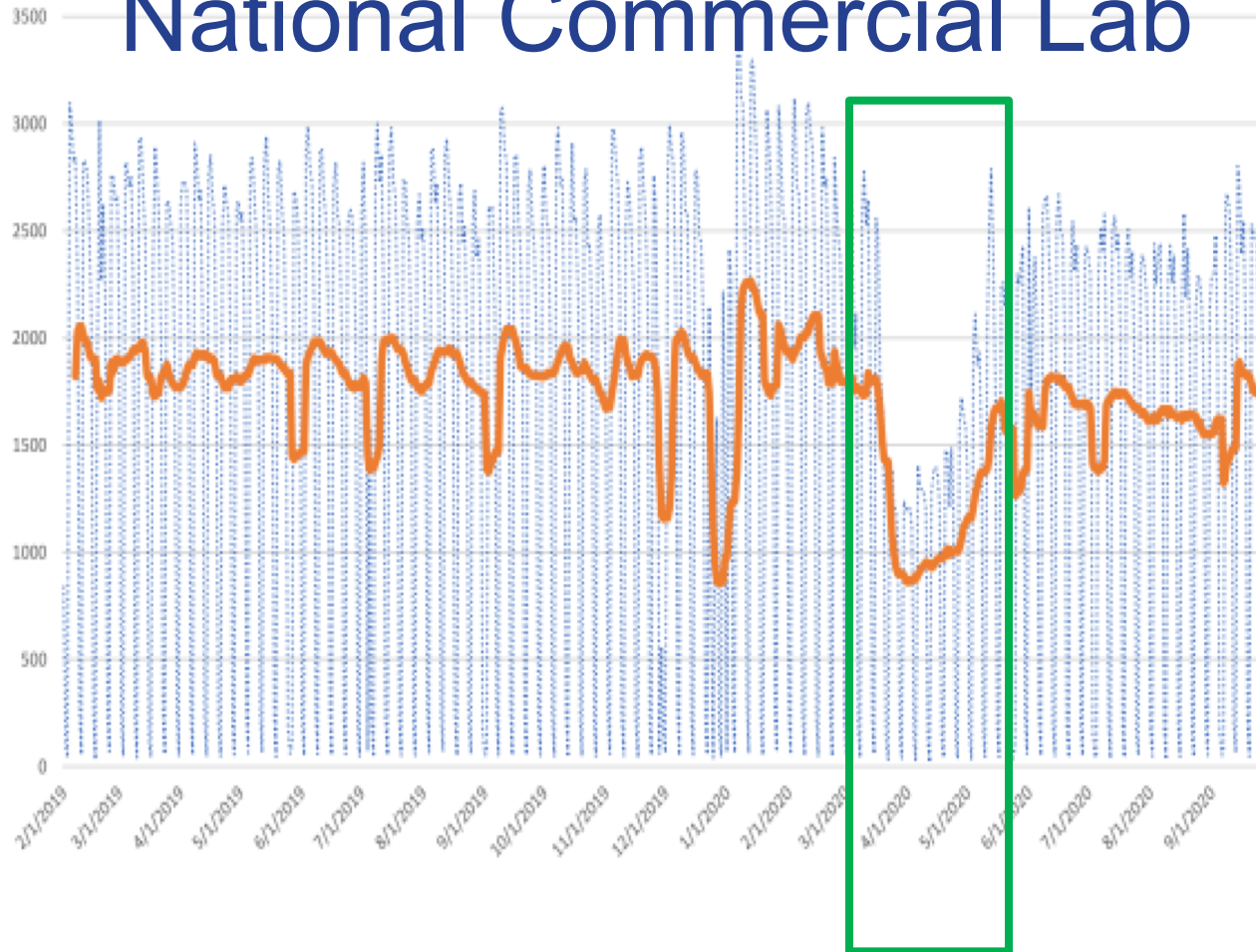


Highest decrease

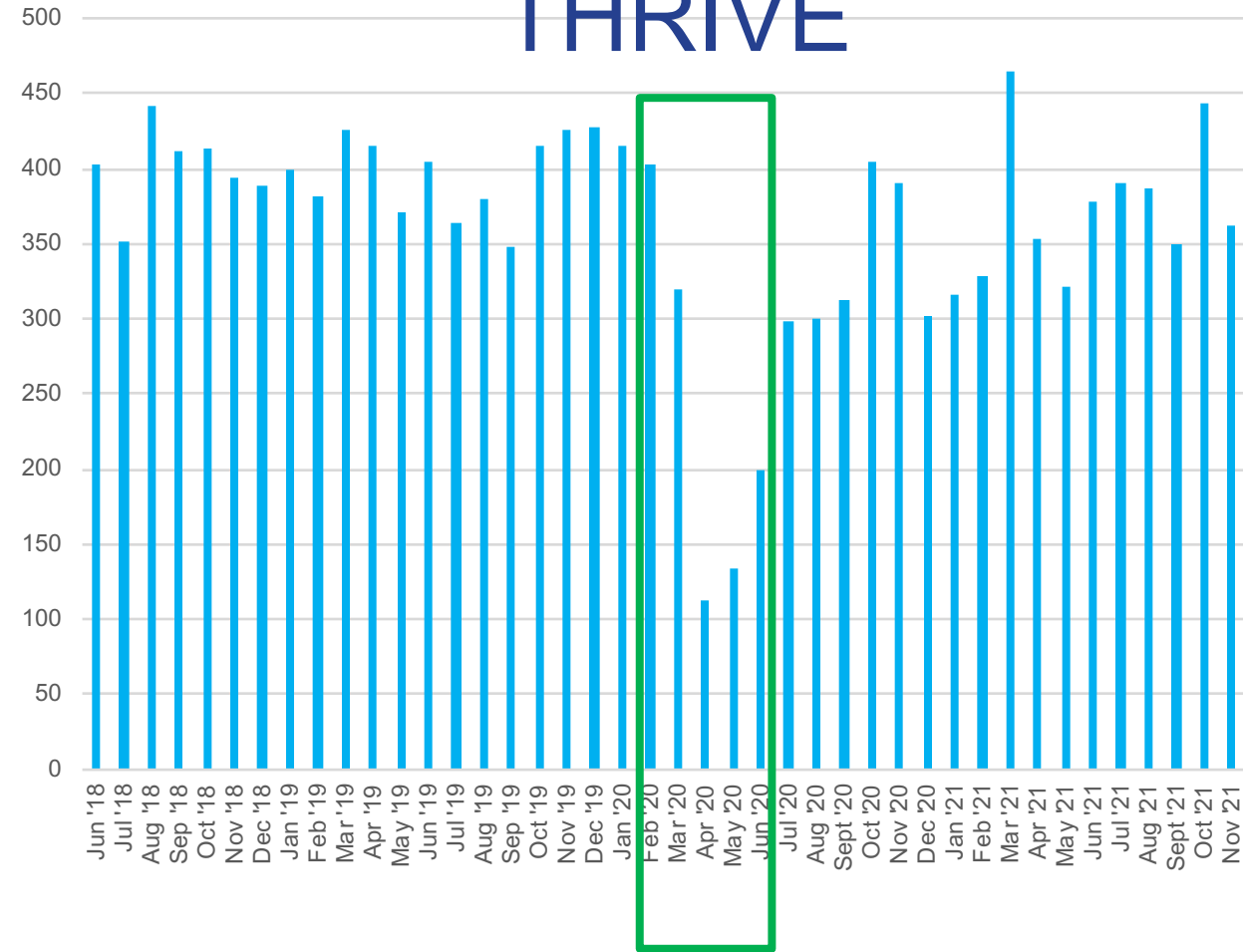


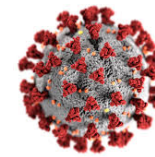
# HIV RNA tests/ month

## National Commercial Lab



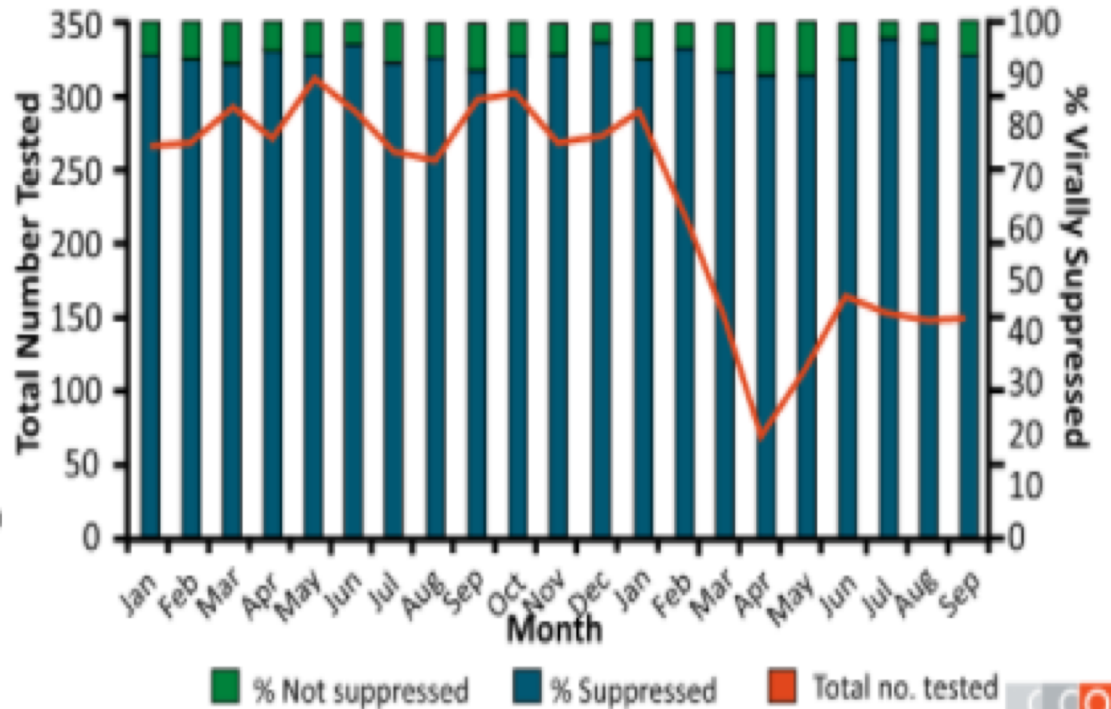
## THRIVE



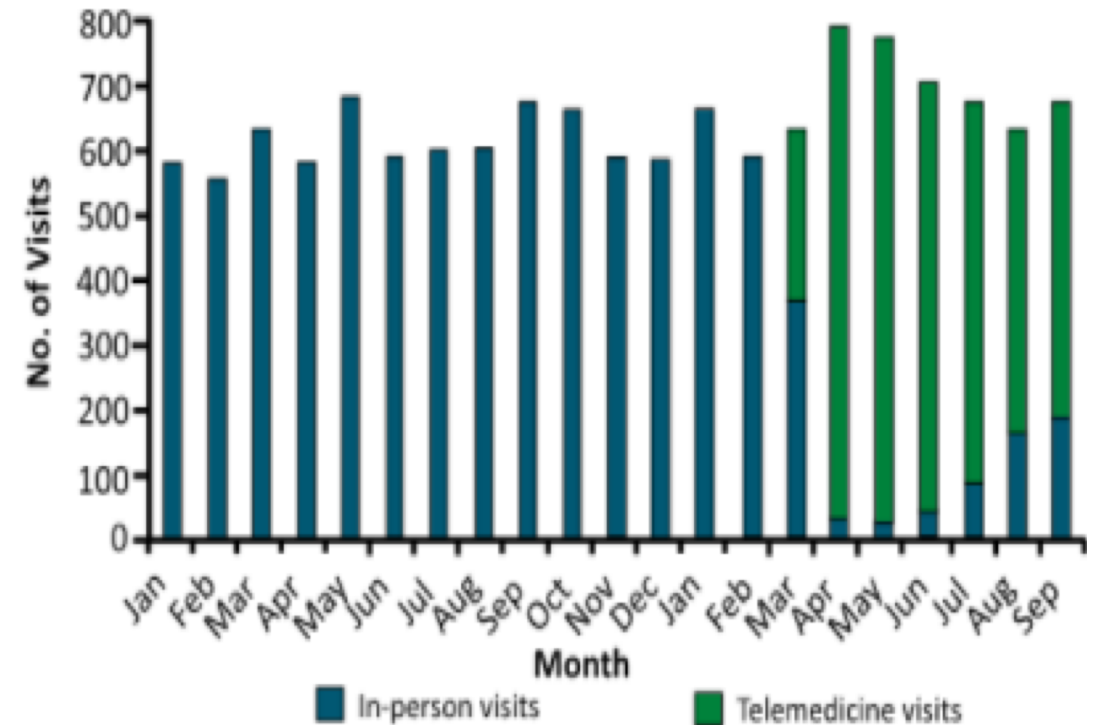


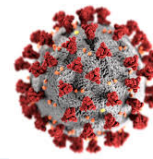
# HIV care engagement through the COVID-19 pandemic

**Number of HIV RNA Tests and Rates of Viral Suppression, 2019-2020**



**Clinic Visits by PWH/Month, 2019-2020**

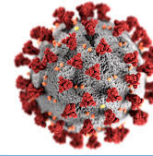




# Caring for PAWH/OAWH during COVID-19 Pandemic







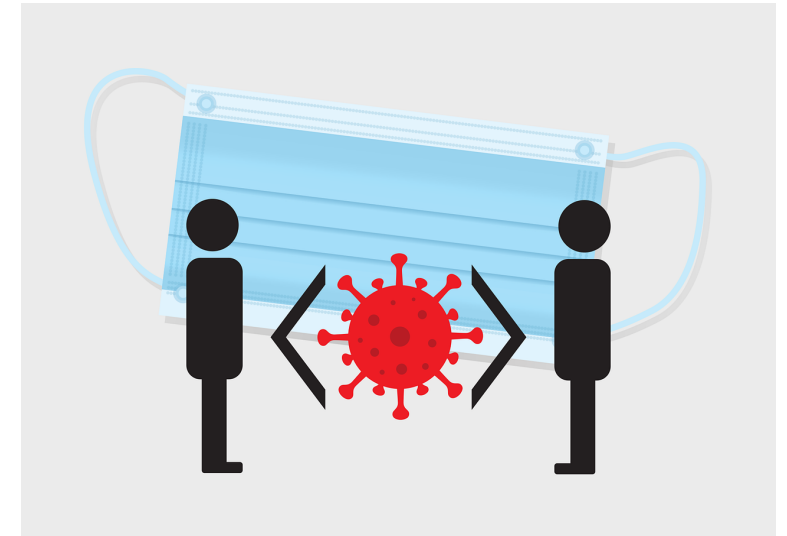
## Possible solutions

- Safe(r) in-person visits
- Meeting medical needs outside of in-person visits
- Meeting patient resource needs
- Meeting patients mental and behavioral health needs
- Addressing COVID-19 stigma
- Vaccination!
  - Transition to telemedicine
  - Revision of staff roles
  - Repurposing of funding
  - Reliance on local resources

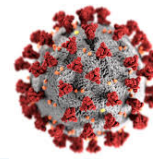


## Safe(r) in-person visits

- Limited appointments by patient type
- Spaced out appointments
- Limited appointments per day
- Physical distancing within the clinical space
- Discourage walk ins, loitering
- Pre-visit and front door symptom screenings



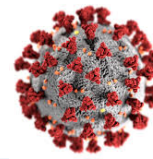




## Meeting medical needs outside of in-person visits

- Comprehensive geriatric assessment
- Telemedicine / telework
- Home monitoring
- Outside laboratories
- Pharmacy: extended and synchronized refills, home delivery, medication reconciliation, BP management
- Social work, law: advanced care planning

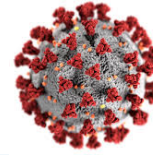




## Meeting patient resource needs

- Food
- Personal care items
- Transportation
- Telemedicine support



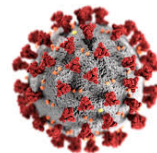


## Meeting patients mental and behavioral health needs

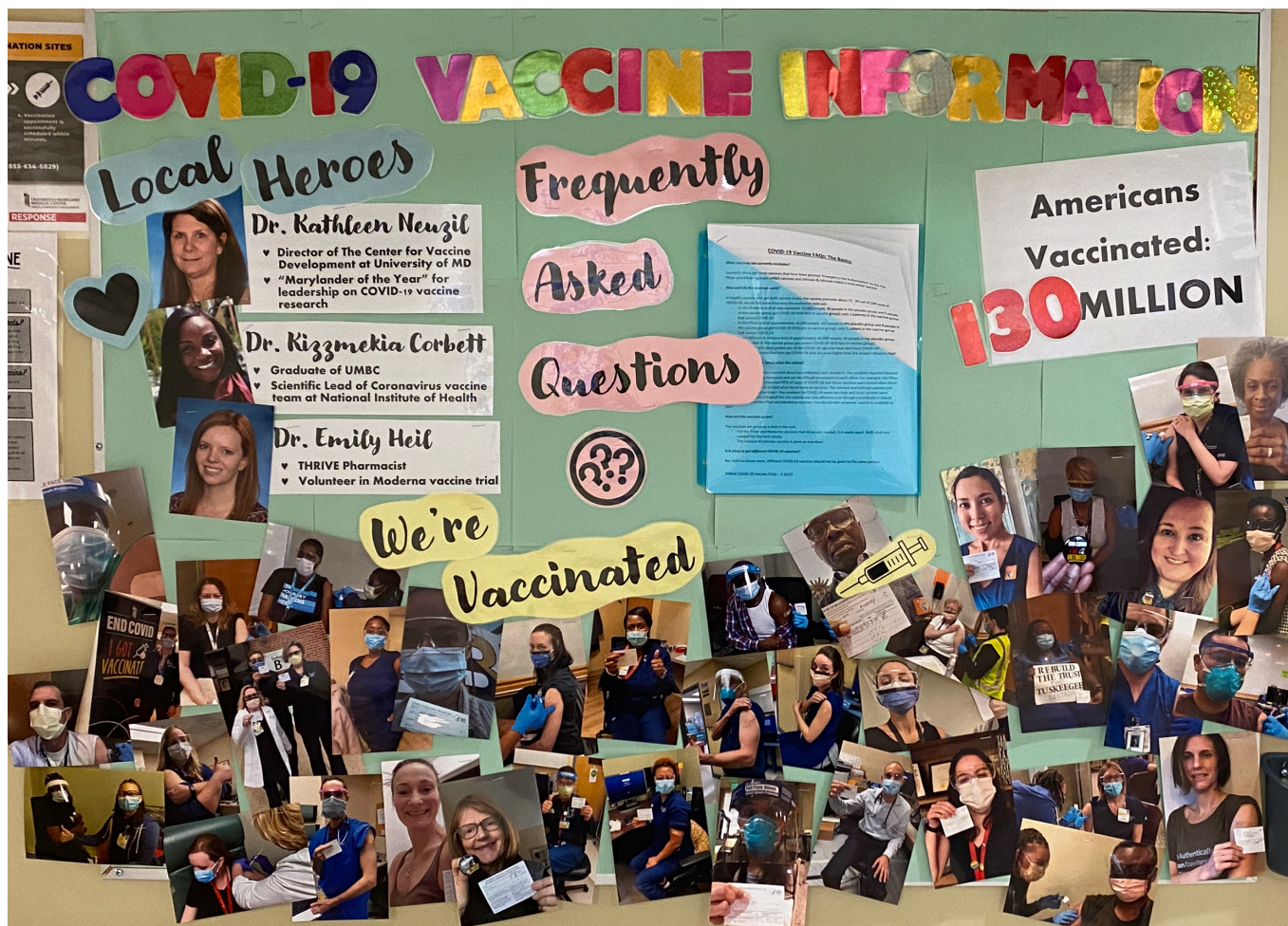
- Make telemedicine visit as 'normal' as possible
- Connection with support system
- Collaborative care mental health model
- Virtual support groups
- Adjustment of buprenorphine maintenance program







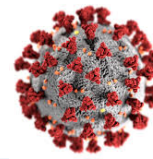
# Vaccination



Have questions about the COVID-19 vaccine? If so, schedule a telemed visit with a THRIVE pharmacist to get your questions answered!!



- ✓ Is it safe?
- ✓ What are the side effects?
- ✓ Should I get the vaccine?
- ✓ Am I in a high risk group?
- ✓ When is it my turn?



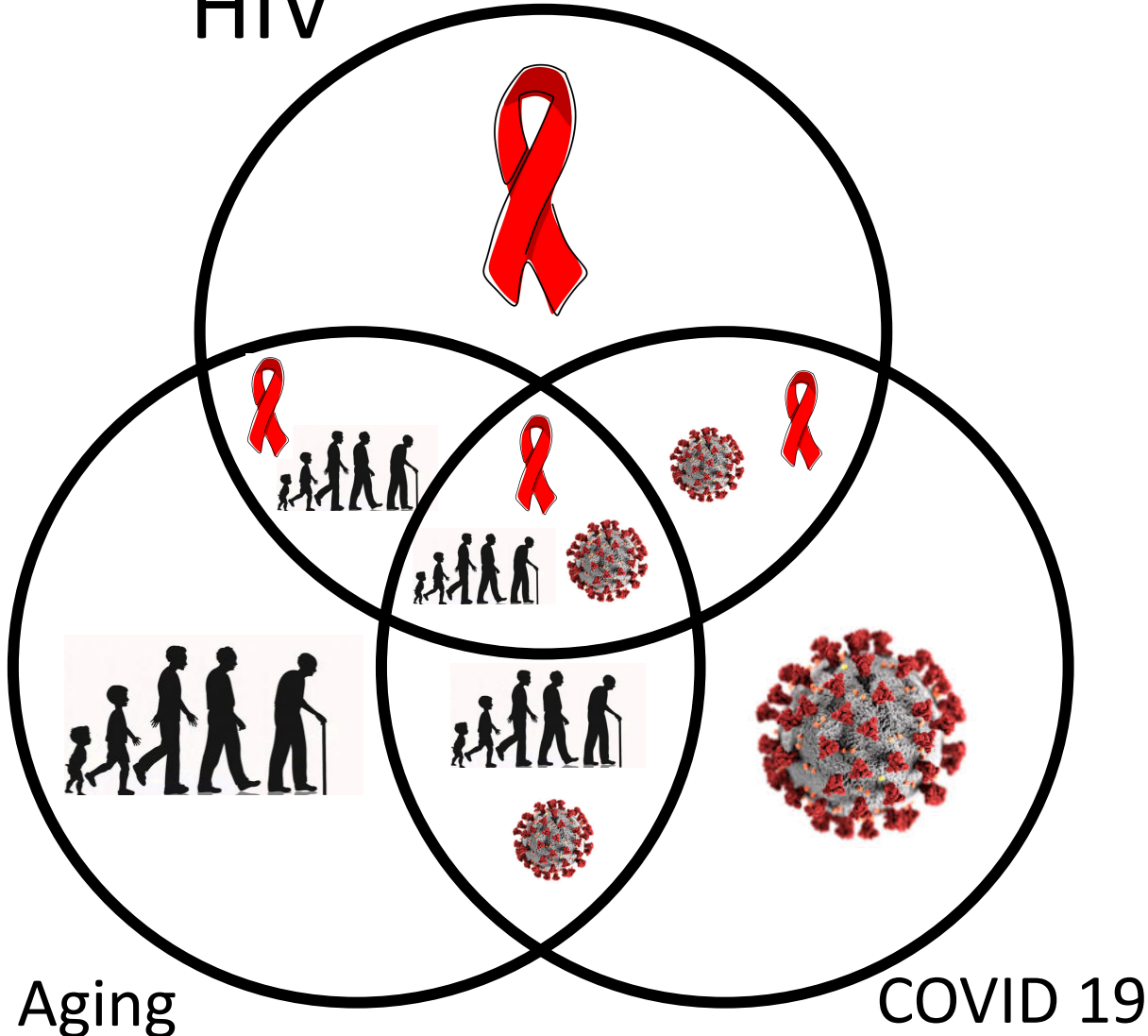
# COVID-19 Fear, Stigma, & Resilience

- Fear & Stigma
  - “The virus”
  - Repeated requests for testing without exposure
  - Patients turned away due to prior + testing
  - Delayed or missed medical care
- Resilience
  - Strict compliance with CDC recommendations
  - “It is what it is”





HIV



## Summary

- PLWH are PAWH and OAWH (aging & older)
  - New models of geriatric care needed
- Poor COVID outcomes:
  - Age
  - Comorbidities prevalent in HIV/ OAWH
  - HIV alone (worse with low CD4)
- During pandemic:
  - Lower HIV screening
  - Less HIV monitoring
  - Same suppression rates and overall visits
- OAWH at risk for poor social outcomes also
  - Can be partially mitigated with shifting model