

HIV & Aging Community Perspectives & Priorities

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HIV & Aging Research Project-Palm Springs

Mountain West AETC May 2022



Outline

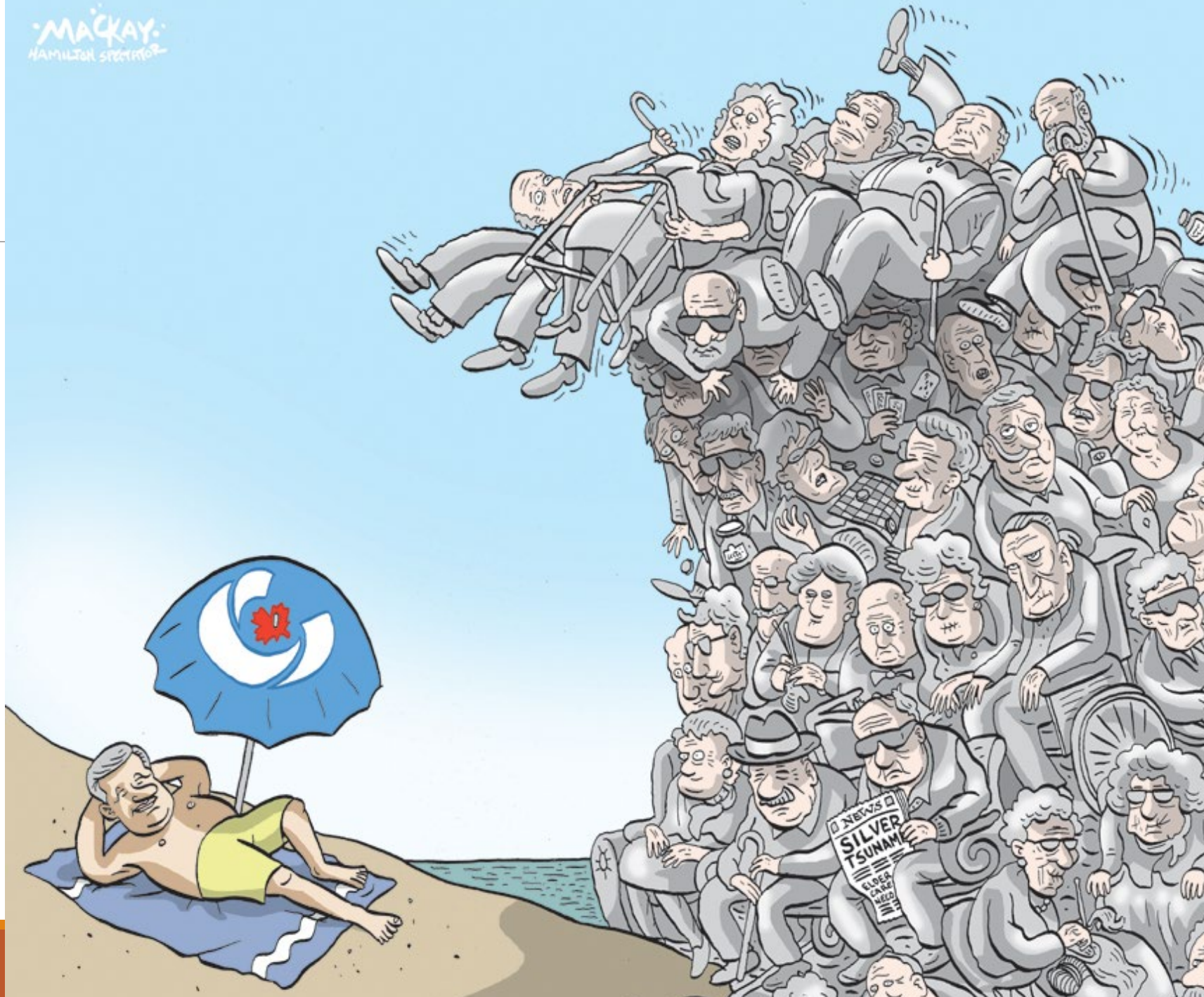
Silver Tsunami

Accelerated vs accentuated aging

Comorbidity burden

What to do?

- Screening & treating earlier & more aggressively (CVD & metabolic: HTN/DM/hyperlipidemia, cancers (esp AC in light of recent ANCHOR study data))
- Novel therapies: e.g. senolytics
- Advocacy:
 - NIH/DAIDS for HIV & aging research
 - HHS/HRSA/RyanWhite for programming & implementation
 - Treatment guidelines bodies: e.g. IDSA, IAS-USA, etc



Total with Diagnosed HIV = 1,025,744

Persons with Diagnosed HIV

200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0

n = 507,2176 (49.4%)

n = 518,568 (50.6%)

<13 13-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 ≥65

Age Group (Years)

1,912

664

4,322

26,914

70,839

87,843

93,817

96,965

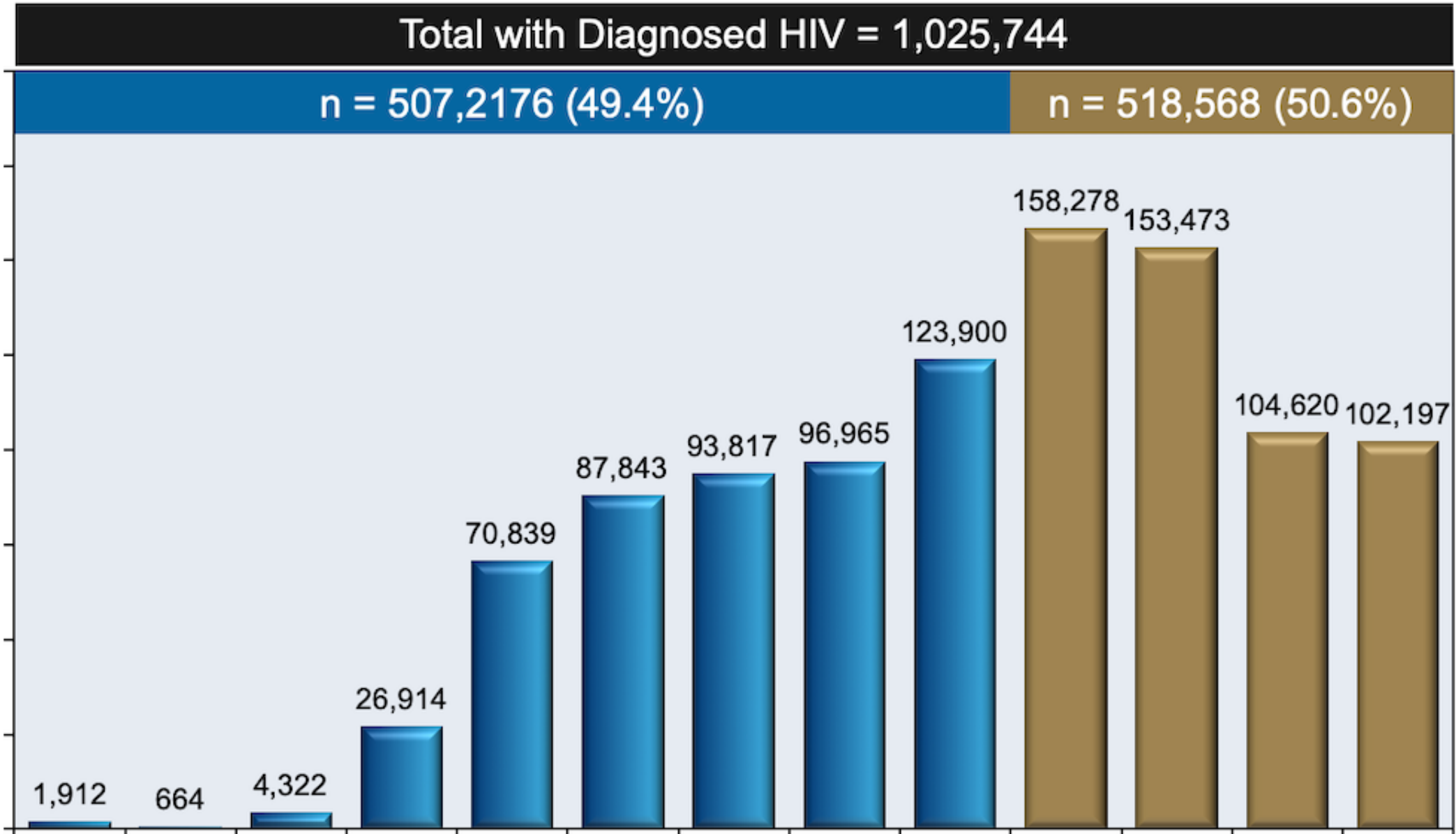
123,900

158,278

153,473

104,620

102,197



Total New HIV Diagnoses = 37,515

n = 31,273 (83.4%)

n = 6,242 (16.6%)

New HIV Diagnoses

10,000
8,000
6,000
4,000
2,000
0

<13 13-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 ≥65

Age Group (Years) at Diagnosis

87

20

1,704

6,093

7,690

5,665

4,215

2,981

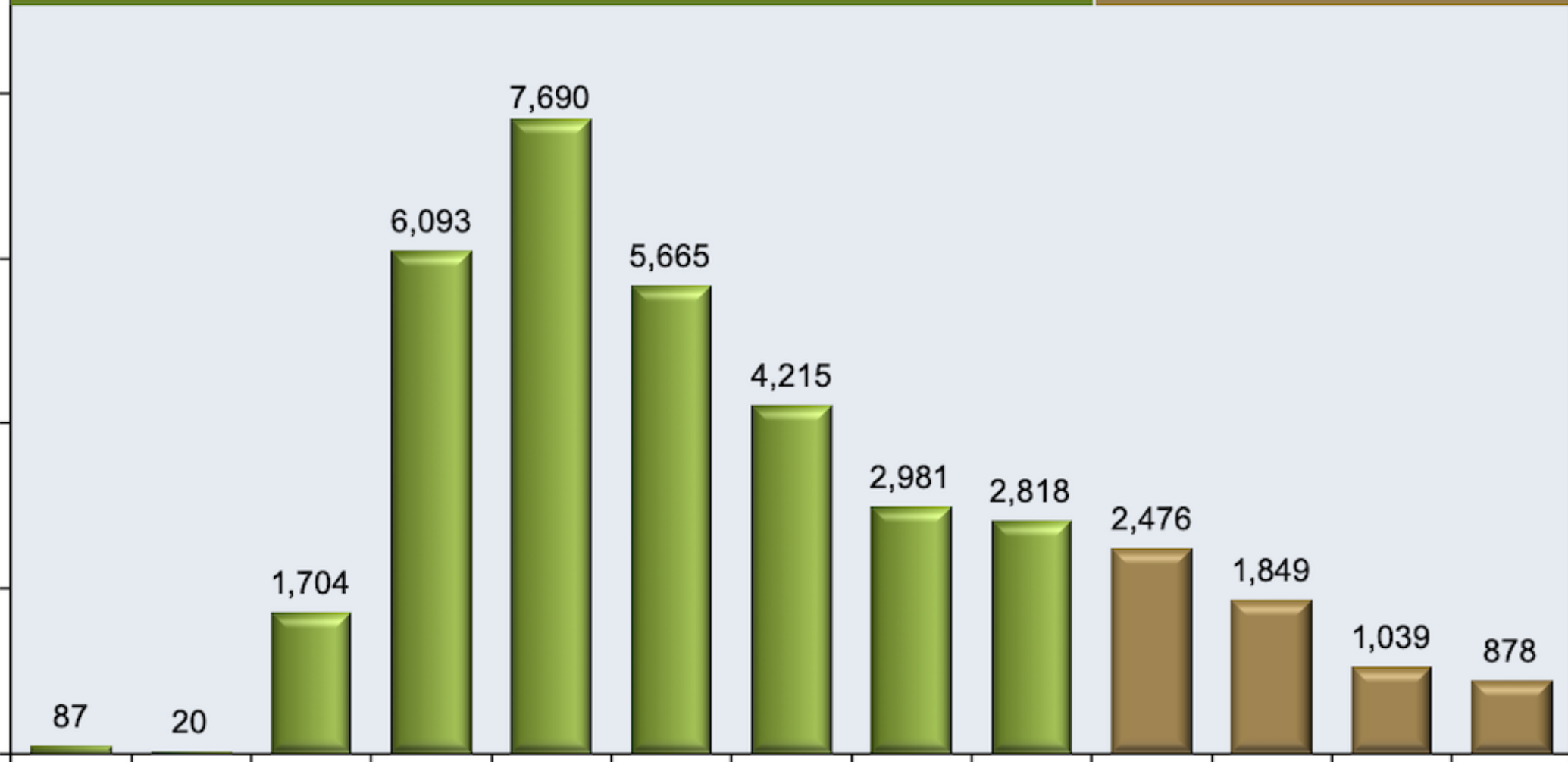
2,818

2,476

1,849

1,039

878



African-Americans. & Latinos have 3-4 higher rates.

“Chronic health conditions in Medicare beneficiaries

65 years and older with HIV infection”
 HIV+ beneficiaries were more likely to be Hispanic, African-American, male

Table 4. Adjusted odds ratios for the number of chronic conditions as an index among Medicare beneficiaries at least 65 years old with HIV infection^a.

HIV+ vs. HIV– (N = 29 060 402)	aOR (95% CI)	Wald χ^2 Pvalue
Number of chronic conditions ^b		
0	Reference	Reference
1	2.38 (2.21, 2.57)	<0.0001
2	2.63 (2.46, 2.83)	<0.0001
3	2.98 (2.46, 2.83)	<0.0001
4	4.13 (3.87, 4.41)	<0.0001
5	7.07 (6.61, 7.56)	<0.0001
Sex		
Male	2.11 (2.06, 2.17)	<0.0001
Female	Reference	Reference
Age (for each year younger)		
	0.94 (0.93, 0.94)	<0.0001
Race/ethnicity		
Unknown race	0.77 (0.40, 1.48)	0.43
Non-Hispanic white	Reference	Reference
African-American	3.86 (3.75, 4.00)	<0.0001
Other race	1.16 (0.98, 1.37)	0.09
Asian/Pacific Islander	0.62 (0.60, 0.70)	0.18
Hispanic	3.41 (3.29, 3.54)	<0.0001
Native American	0.70 (0.54, 0.91)	0.007
Had dual coverage		
ESRD	2.31 (2.24, 2.38)	<0.0001
	1.44 (1.23, 1.68)	<0.0001

CI, confidence interval; ESRD, end stage renal disease; aOR, adjusted odds ratio.

^aHIV+ beneficiaries were those with ICD-9-CM, or DRG codes with a diagnosis of HIV, HIV– were beneficiaries without these codes.

^bChronic health conditions were defined by ICD-9-CM, diagnosis or procedure codes, or HCPCS codes.



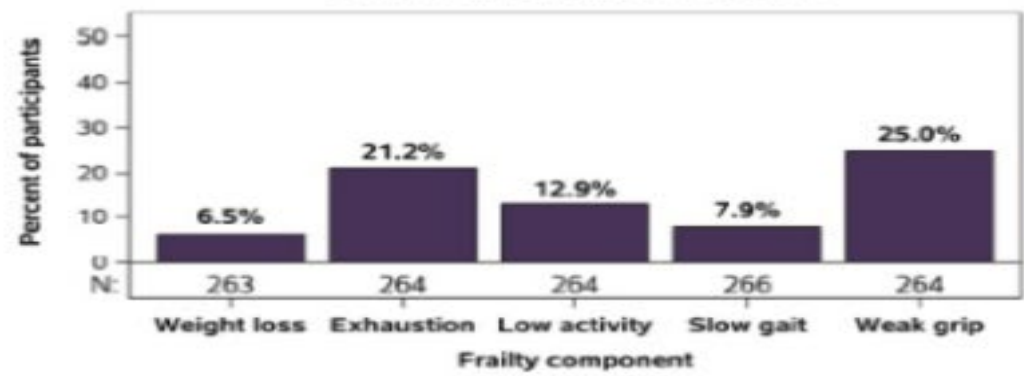
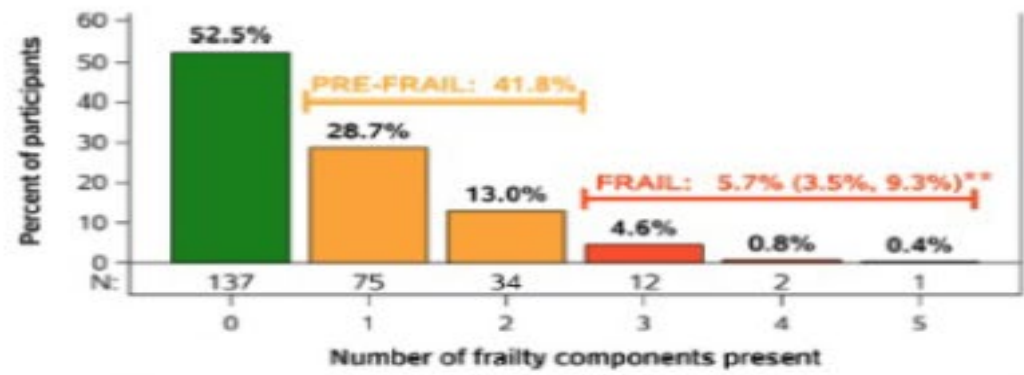
Frailty

Study of 266 PLWH in US in the REPRIEVE Trial

Baseline Characteristics		N=266
Age (years)		51 (46, 55)
Natal male		216 (81%)
Black race		121 (45%)
Hispanic or Latino		49 (18%)
Physically not active (REAP) ^A		237 (89%)
History of hypertension		74 (28%)
BMI (kg/m ²)	25 to <30	101 (38%)
	≥30	80 (30%)
Waist circumference high ^B		85 (33%)
CD4 count (cells/mm ³)		610 (437, 840)
HIV-1 RNA <50 copies/mL		235 (93%)
Total ART use (years)		11 (6, 16)
Thymidine exposure (ever)		91 (34%)
Unable to perform ≥1 IADL (DASI) ^C		85 (32%)

Frequency (%) for categorical, median with 1st and 3rd quartiles for continuous measures. Missing data: Physical Activity (n=1), Waist circumference (n=10), HIV-1 RNA (n=12). ^ARapid Eating Assessment for Patients (REAP); ^BWaist circumference >102 cm in men, >88 cm in women classified as high; ^CInstrumental Activities of Daily Living (IADL) by Duke Activity Status Index (DASI).

Prevalence of Frailty



Kaiser: Life Expectancy of People with/without HIV

Cohort of adults with HIV in care 2000-2016 (N=39,000)

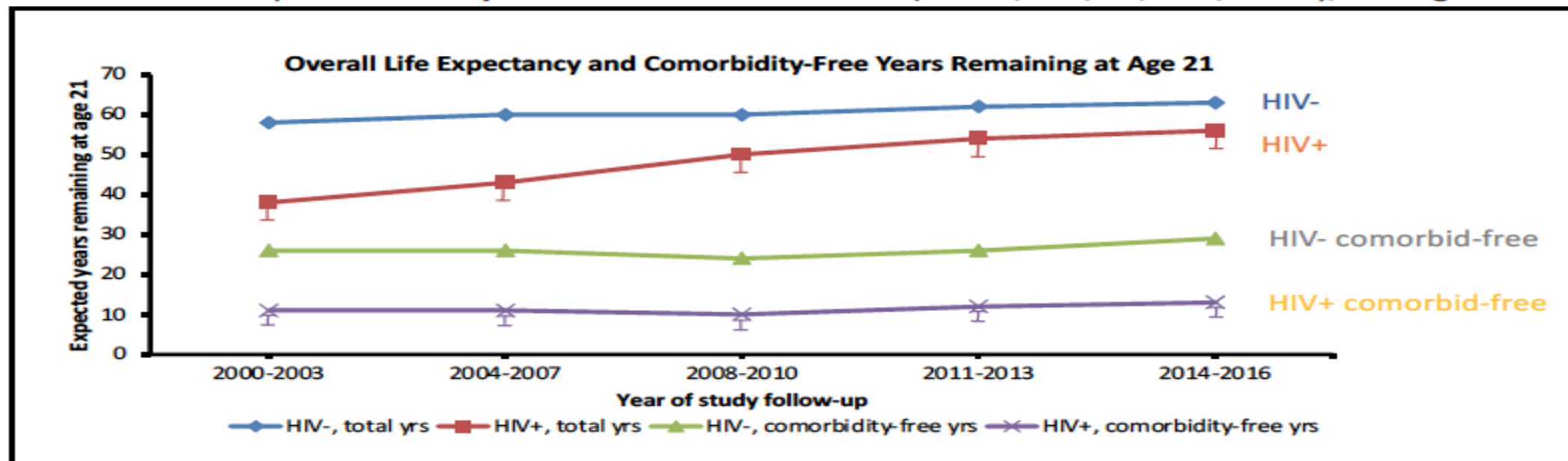
Matched 1:10 with uninfected (N=387,767)

Study population:

Avg 41 yo, Asian 5%/Black 25%/Latinx 24%/white 45%, MSM 70%, HS 20%, IDU 8%

Results: Narrowing of the survival gap – now **9 years shorter with HIV** vs no HIV

- **Gap = 6.8 years if ART initiated before CD4 < 500**
- No improvement in **years without comorbidities** (cancer, DM, CV, liver, kidney, or lung disease)



Narrowing gap in overall but not comorbidity-free life expectancy by HIV status

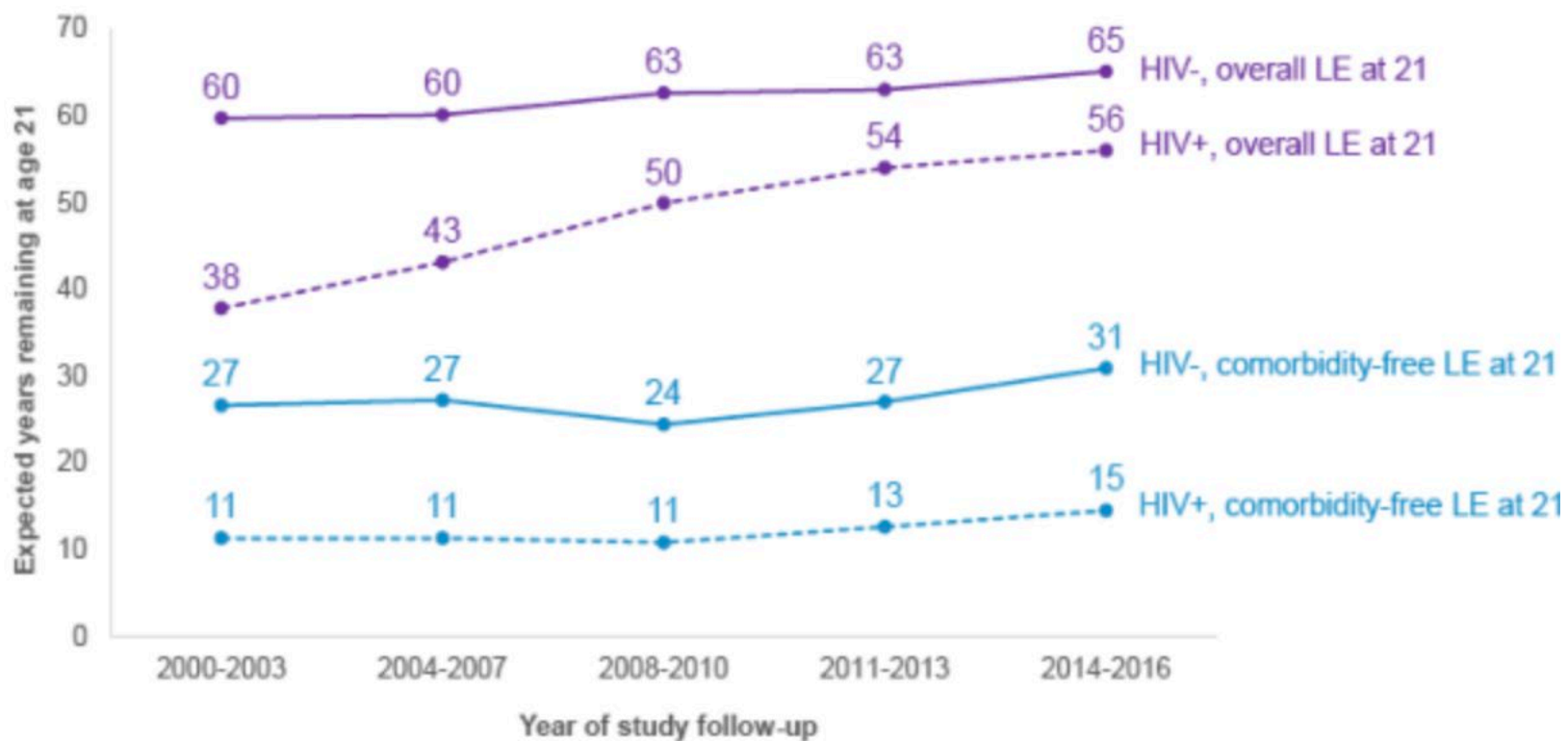
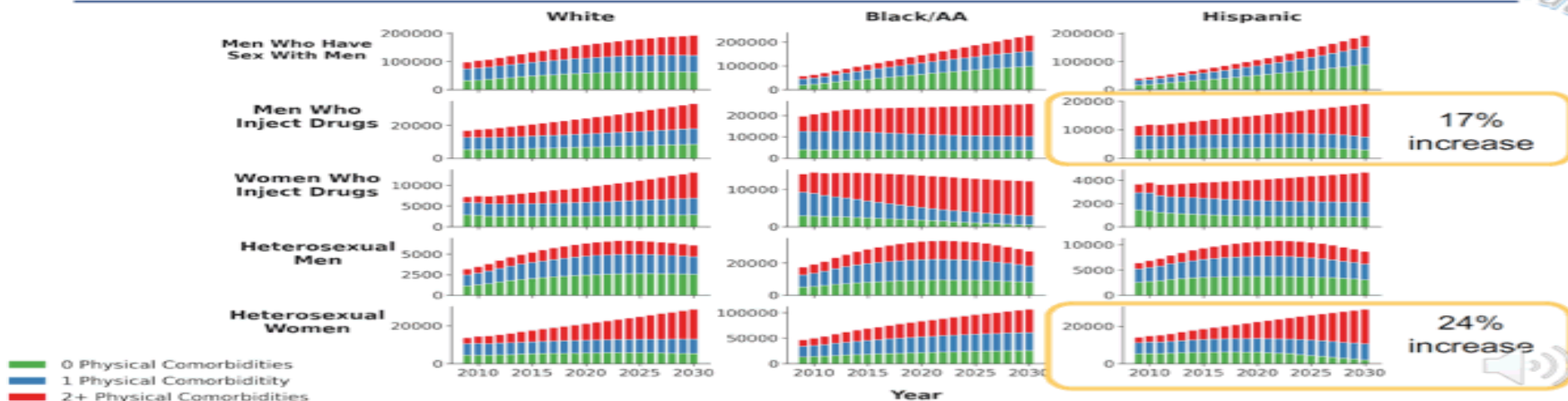


Table 3. Overall and Comorbidity-Free Life Expectancy at Age 21 Years for Individuals With and Without HIV Infection and for Individuals With HIV Infection Who Initiated ART at High CD4 Cell Counts, Kaiser Permanente, 2011-2016

Outcome	Life expectancy at age 21 y, No. of y (95% CI)			Difference	
	Individuals with HIV infection	Individuals with HIV infection with CD4 cell count $\geq 500/\mu\text{L}$ at ART initiation	Individuals without HIV infection	Individuals with HIV infection vs individuals without HIV infection	Individuals with HIV infection with CD4 cell count $\geq 500/\mu\text{L}$ at ART initiation vs Individuals without HIV infection
Overall	54.9 (54.0 to 55.9)	57.4 (55.7 to 59.1)	64.2 (64.0 to 64.4)	9.2 (8.3 to 10.2)	6.8 (5.0 to 8.5)
Comorbidity free ^a	13.7 (13.0 to 14.4)	19.5 (17.8 to 21.2)	29.0 (28.6 to 29.3)	15.3 (14.5 to 16.1)	9.5 (7.7 to 11.2)
Chronic disease					
Liver	33.1 (31.9 to 34.2)	42.5 (39.8 to 45.1)	57.6 (57.3 to 57.9)	24.5 (23.3 to 25.7)	15.1 (12.5 to 17.8)
Kidney	40.2 (39.5 to 41.0)	42.5 (40.8 to 44.2)	56.3 (56.0 to 56.5)	16.1 (15.3 to 16.9)	13.8 (12.0 to 15.5)
Lung	23.4 (22.3 to 24.6)	31.3 (28.5 to 34.1)	38.5 (38.0 to 38.9)	15.0 (13.7 to 16.3)	7.2 (4.3 to 10.0)
Diabetes	44.2 (43.2 to 45.3)	50.2 (47.9 to 52.4)	51.7 (51.3 to 52.0)	7.4 (6.4 to 8.5)	1.5 (-0.8 to 3.8)
Cancer	48.1 (47.0 to 49.1)	52.6 (50.3 to 54.8)	58.0 (57.7 to 58.2)	9.9 (8.8 to 11.0)	5.4 (3.1 to 7.7)
Cardiovascular disease	51.8 (50.9 to 52.7)	56.4 (54.3 to 58.5)	60.8 (60.5 to 61.0)	9.0 (8.0 to 9.9)	4.4 (2.2 to 6.5)

- 0 Physical Comorbidities
- 1 Physical Comorbidity
- 2+ Physical Comorbidities

Projected burden of physical multimorbidity by risk-groups -largest increase in prevalence



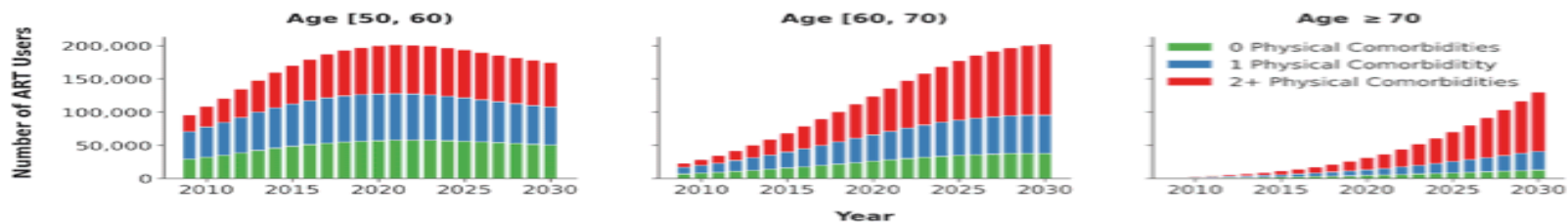
Limitations

- Not reflecting potential improvements to HIV cascade according to EHE goals over the next decade
- Excluding some sub-groups of PLWH (e.g., transgender, Asian race)
- NA-ACCORD data limited to the earliest diagnosis of a condition/disease (excluding the incidence of undiagnosed diseases, and incidence among those not in care)
- Excluding additional comorbidities (e.g., arthritis, incontinence)
- Due to small sample size, some comorbidity prevalence and incidence estimates were not unique to each of the 15 sub-groups (collapsing groups with <50 events)

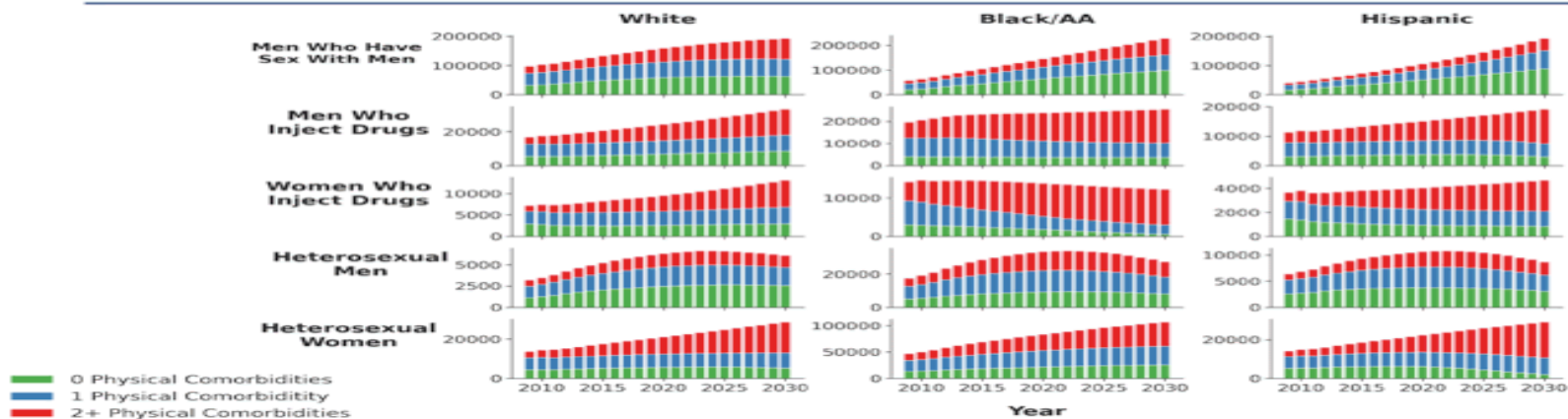
More information available at <https://pearlhivmodel.org>

Projected burden of multimorbidity by age

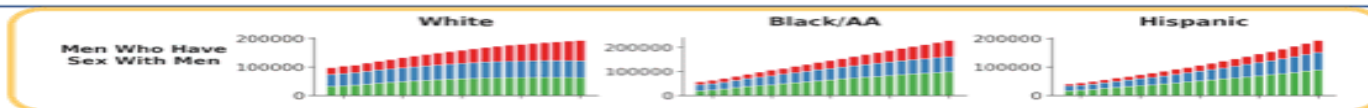
- Older age-groups experience an **increase in population size and prevalence of multimorbidity**
- Among those ≥ 70 yrs, the projected prevalence of multimorbidity increases from 58% (in 2020) to 69% (in 2030), corresponding to an additional 71,000 individuals living with 2+ physical comorbidities beside HIV by 2030



Projected burden of physical multimorbidity by risk-groups



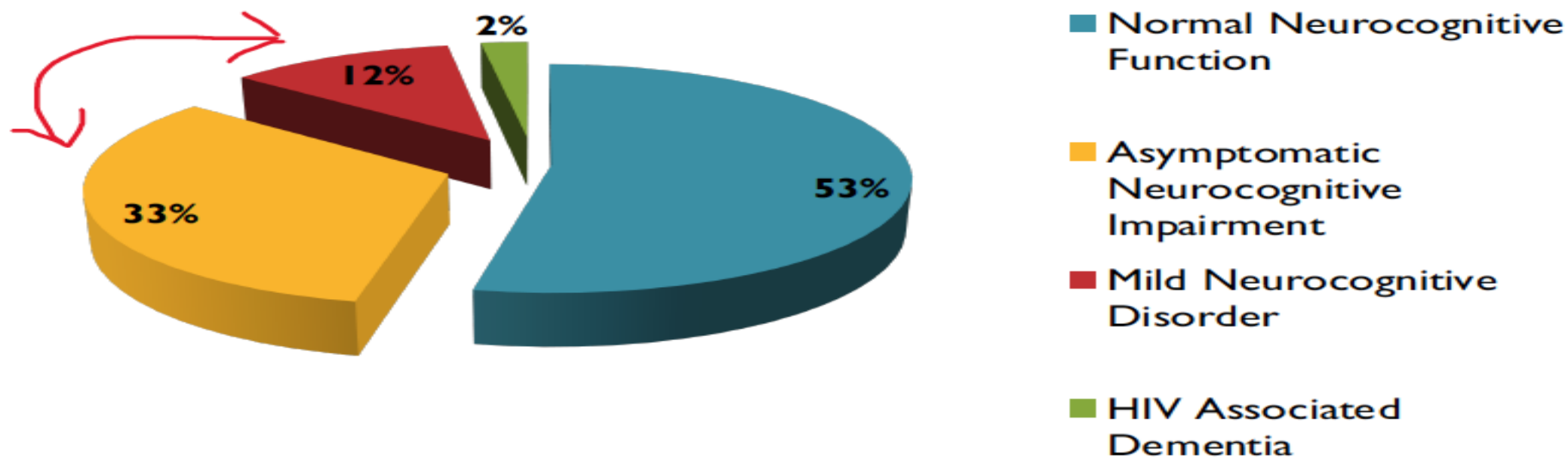
Projected burden of physical multimorbidity by risk-groups -Largest increase in number of cases



- The Largest increase in number of people with ≥ 2 physical comorbidities from 2020 to 2030 was projected among MSM, ranging from an additional **34,000 cases among Black/AA MSM** to **21,000 cases among Hispanic MSM**

Current puzzle (2020): persistent mild forms of neurocognitive impairment in treated HIV

- 1555 person USA urban CHARTER cohort - 71% on antiretroviral therapy (excluding most 'confounded' participants):



Many individuals with 'co-morbidities' in this cohort.

Adapted from: Heaton, et al. *Neurology*. 2010;75; 2087.

Also: Robertson, et al. *AIDS* 2007, 21:1915; Simioni, et al. *AIDS* 2010, 24: 1243.

2018 ACTG Community-generated Research Priorities

1. Cure research—including reservoir and latency research
2. **Aging/Long-term effects of treatment**
3. Women's health
4. Is research safe and ethical?
5. Treatment for drug-experienced patients



ACTG Aging Research: Challenges & Solutions?

Trouble getting intervention studies approved & funded

- huge unmet need, due to many obstacles:
- Competing intra-ACTG priorities: cure, other co-infections, etc
 - Should numbers of PLH affected influence funding priorities?
- Outside funding—inter-institute collaborations
- Cooperation of NIH arms: OAR, DAIDS, NIAID, other institutes
- Partner with sociobehavioral research: ACTG SBRWG

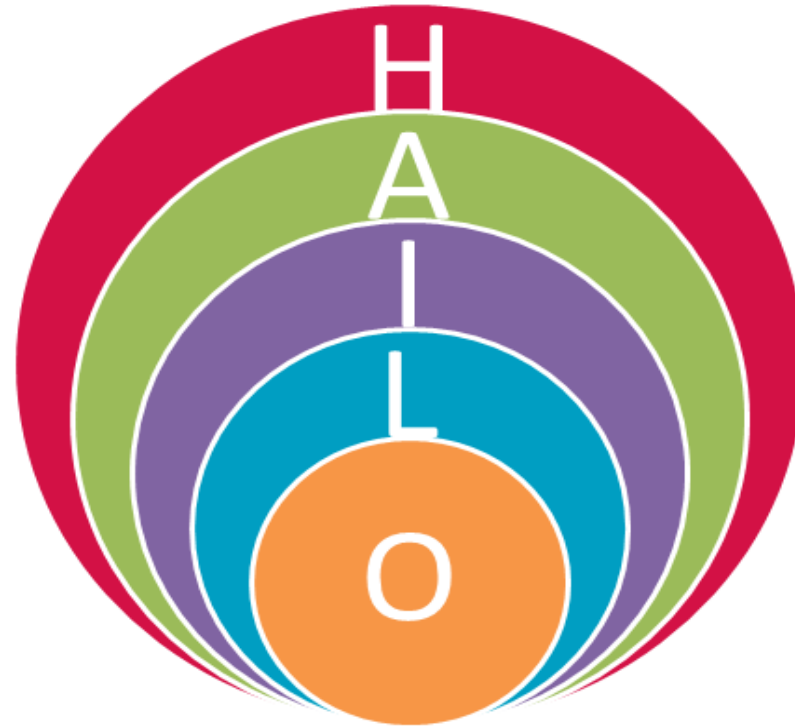
What's Missing in HIV & Aging Research?

Focus on OLD PLWHIV, ie. over 65

Most current data has median age ≈ 50 y/o—in which incidence of age-related co-morbidities is relatively low

Need to focus on PLWHIV in their 60s, 70s, & 80s—and older

Leverage ACTG Cohorts



**HIV Infection, Aging, and Immune Function
Long-term Observational Study**

Leverage ACTG Cohorts



REPRIEVE

Randomized Trial to Prevent Vascular Events in HIV

Enrich Cohorts with Older PLWHIV

MACS

MULTICENTER AIDS
COHORT STUDY



Partner with Existing Cohorts

VA

Kaiser

SCOPE

Hawaii Aging with HIV Cohort

REPRIEVE

ANCHOR

Recruit new pts over 60/65 into existing cohorts

Elicit Multiple Stakeholder Input

PLWHIV

Clinicians

Service providers

Researchers from other networks & cohorts

Various NIH institutes:

DAIDS

NIA

NIDA

NCI

NIMH

Advocacy group: NMAC/FAPP partnership

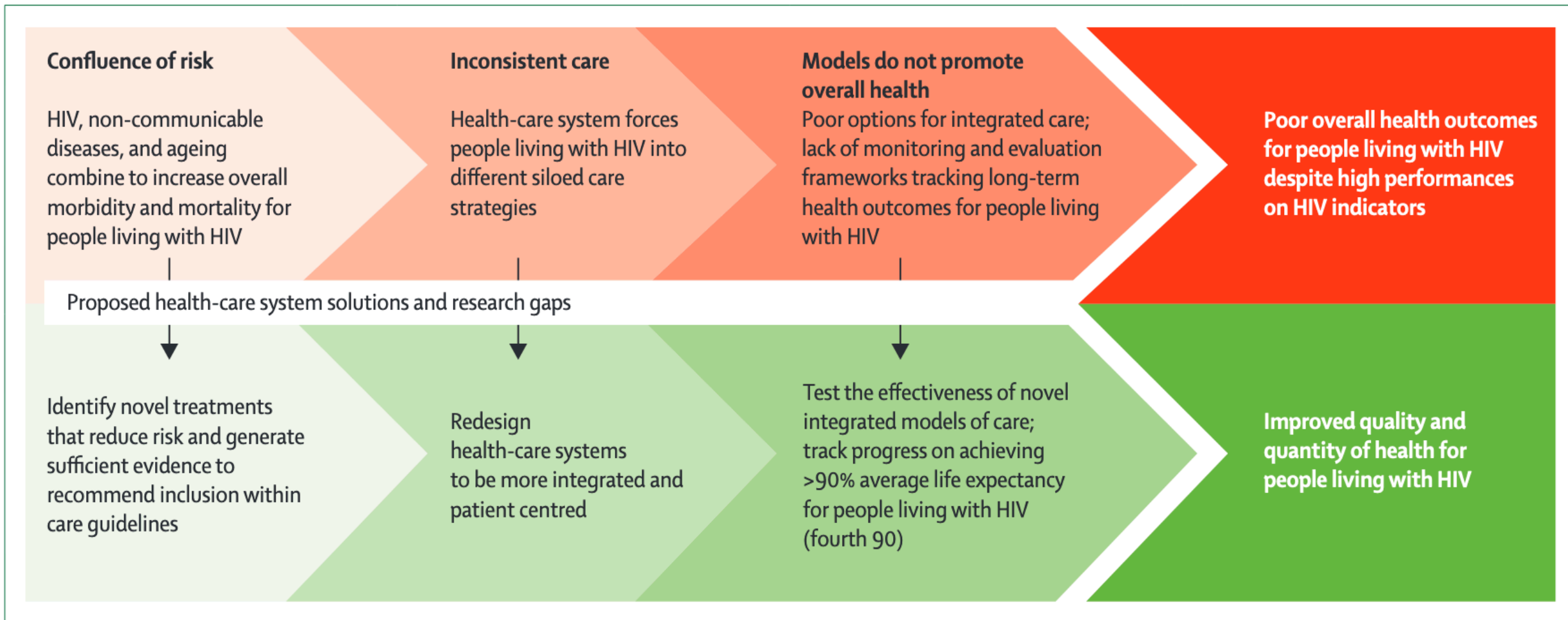


Figure 2: Proposed solutions for health systems to care for ageing people with HIV and comorbid disease

Lancet 2022: How health systems can adapt to a population ageing with HIV and comorbid disease

Jepchirchir Kiplagat, Dan N Tran, Tristan Barber, Benson Njuguna, Rajesh Vedanthan, Virginia A Triant, Sonak D Pastakia

Incorporating Geriatric Model into HIV Clinical Care

Best model for dealing with multiple co-morbidities, polypharmacy, depression & isolation, etc

Not enough geriatricians as Baby Boomers age, let alone for aging PLWHIV

Once again, HIV clinicians may need to expand their expertise to provide the care their patients need.

HIV Geriatric Clinics

Most common Geri-HIV program is consultative clinic

Location	Clinic/name	Resource	Venue	Comment
Boston (US)	Mass General Hospital/Aging Positively	Fitch	Biweekly in ID clinic	Providers may refer anyone over 50 NP sees patients; develops plan with rest of team
Brighton (UK)	Brighton and Sussex U Hosp Silver Clinic	Vera	Monthly clinic sessions	Referral criteria: >50, difficulty coping at home, multimorbidity, polypharmacy; HIV MD, geriatrician, HIV Clin NS, Pharm
Denver (US)	University of Colorado	Erlandson	Outside consultation	Geriatrician, pharmacist see complicated patients 1-3 times – refer back to 1 ^o care
London (UK)	Chelsea/Westminster	Waters	Separate multidisciplinary clinic	Referral criterion: age Consultant, HIV NP, trainee; supported by specialist pharm and dietician
Montreal (CA)	McGill	Falutz	In HIV Clinic	Geriatrician sees referrals as needed as needed; planning pharm, CGA for >60
New York (US)	CSS at WCM/NYPH	Siegler	Geriatrician weekly visit w/in HIV clinic	No fixed referral criteria Geriatrician follows longitudinally Sponsors arts, support groups, inservices
Salem, VA (US)	SAVI	Oursler	VA clinic	Assess multimorb , sarcopenia, frailty, cognition; Staff: Pharm, neuroψ, RD, endo
San Francisco (US)	Ward 86/ Golden Compass	Greene	Geriatric HIV clinic: pharm, screen, geri consult	Referral >70, falls; "navigation": heart/ mind; strength/bones; screening/link to dental, vision, etc ; SW, CBSS, support groups

Policy Issues

Funding the research we need now, not the status quo

ACA: care criteria & evaluations

Restructuring Ryan White to meet current & emerging needs

- Housing
- Financial support—raising income limits for services
- Career training/job placement
- More mental health
- Vision & dental for all
- Peer-to-peer models

Adapting the HIV Workforce

Geriatric-informed care—finding models that work

Trauma-informed care—lots of PTSD & AIDS Survivor Syndrome

Cultural competency: educating frontline providers about the history of the HIV pandemic so they understand what LTS have been through

Recruiting, training, and retaining new medical providers

Advocacy Advocacy Advocacy

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FAPP

Thank you!

Questions?

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