

Aging with HIV in the US / Proposed Research Implementation Study:

clinical & community care & services needs, unmet
needs

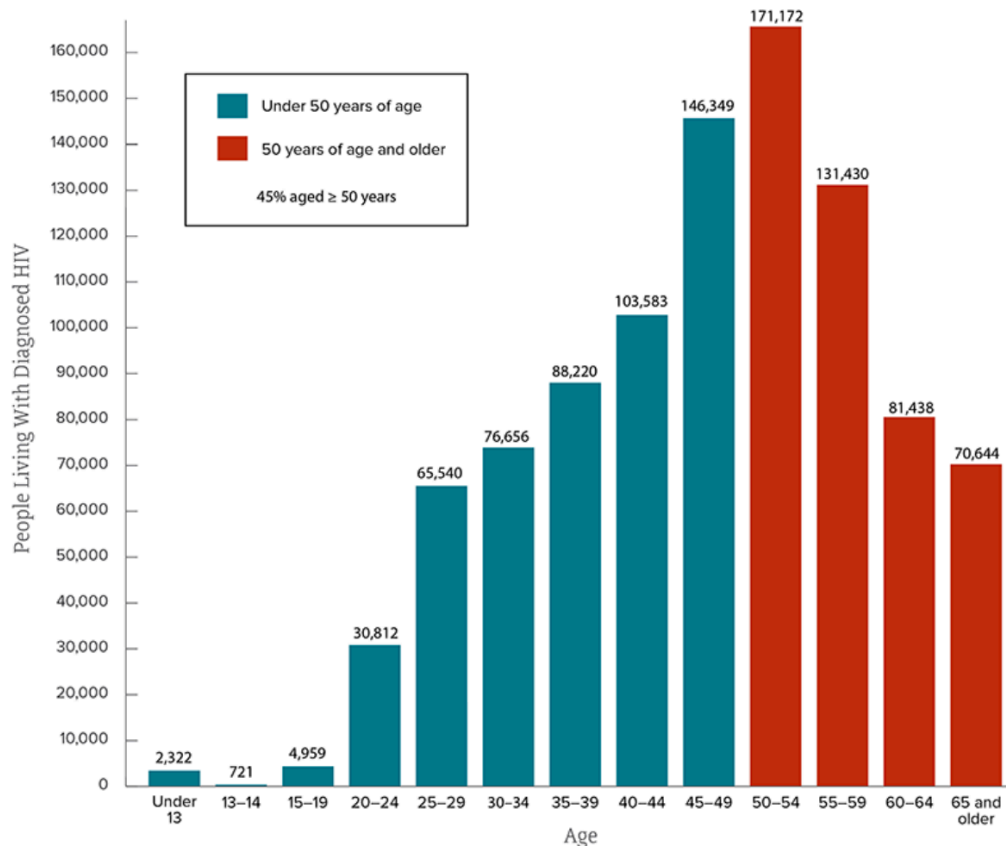
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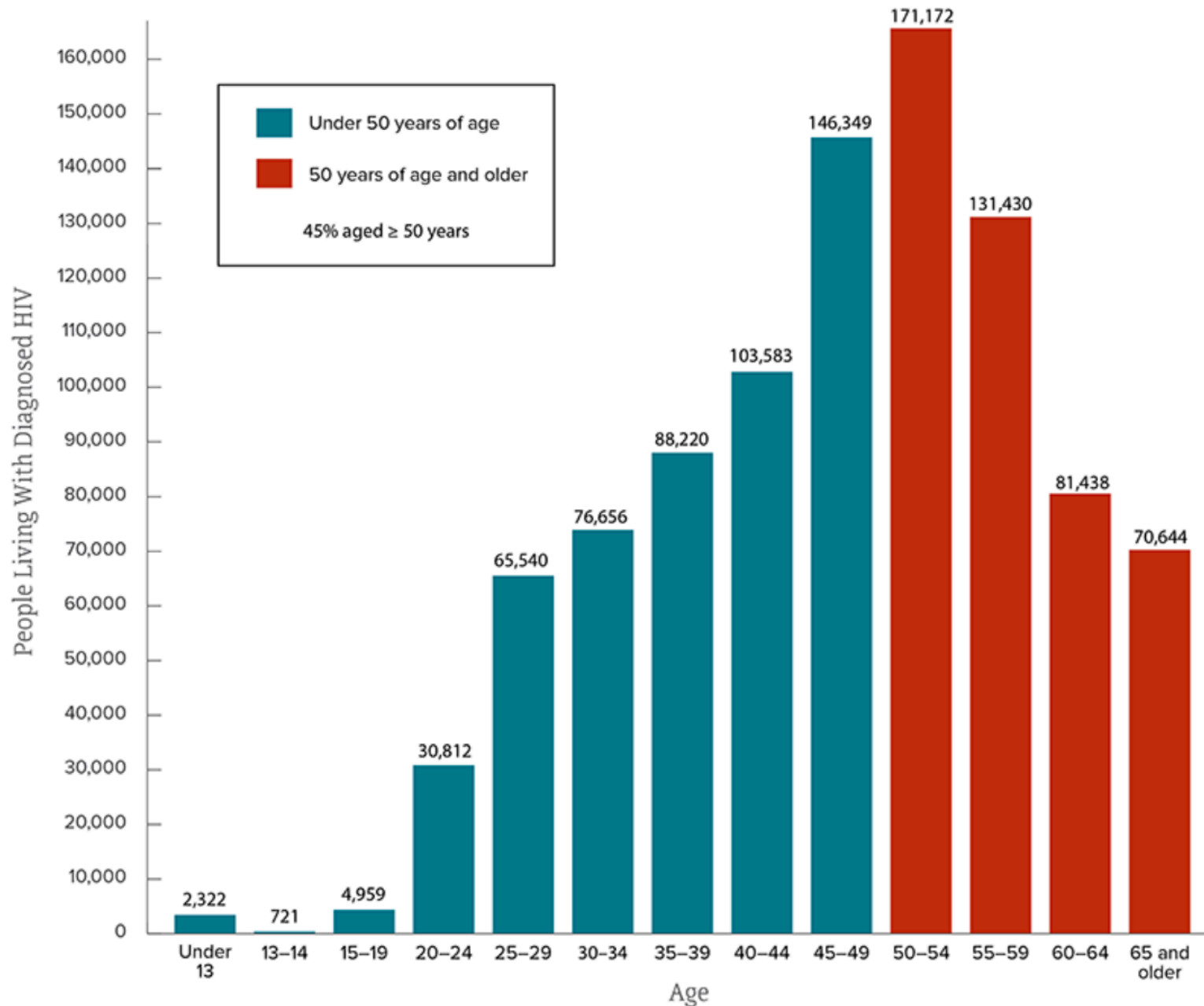
Epidemiology – (1) 70% over 45; (2) 150,000 over 60; (3) 70,000 over 65

People Living With Diagnosed HIV by Age, 2015, United States



Source: CDC. [Diagnoses of HIV infection in the United States and dependent areas, 2016](#). HIV Surveillance Report 2016;28.

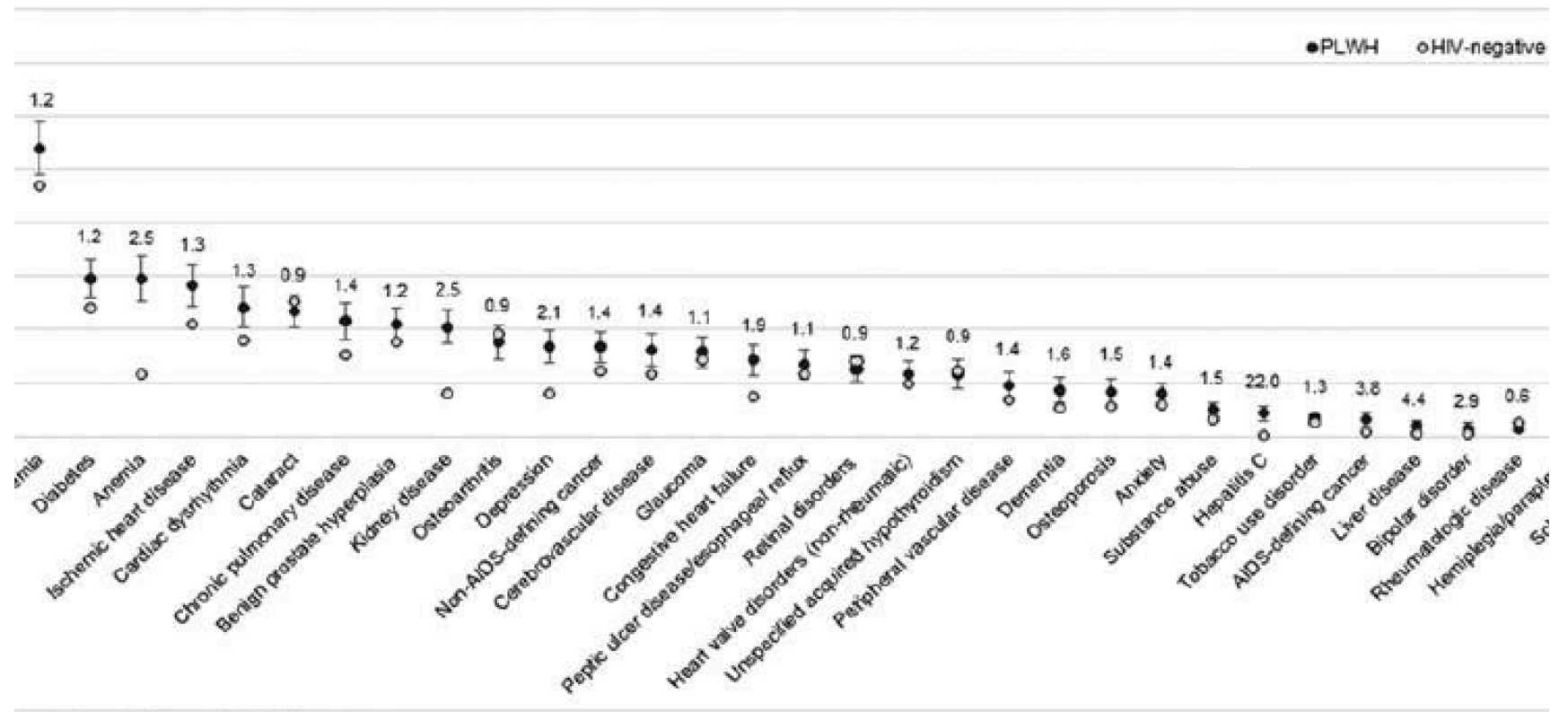
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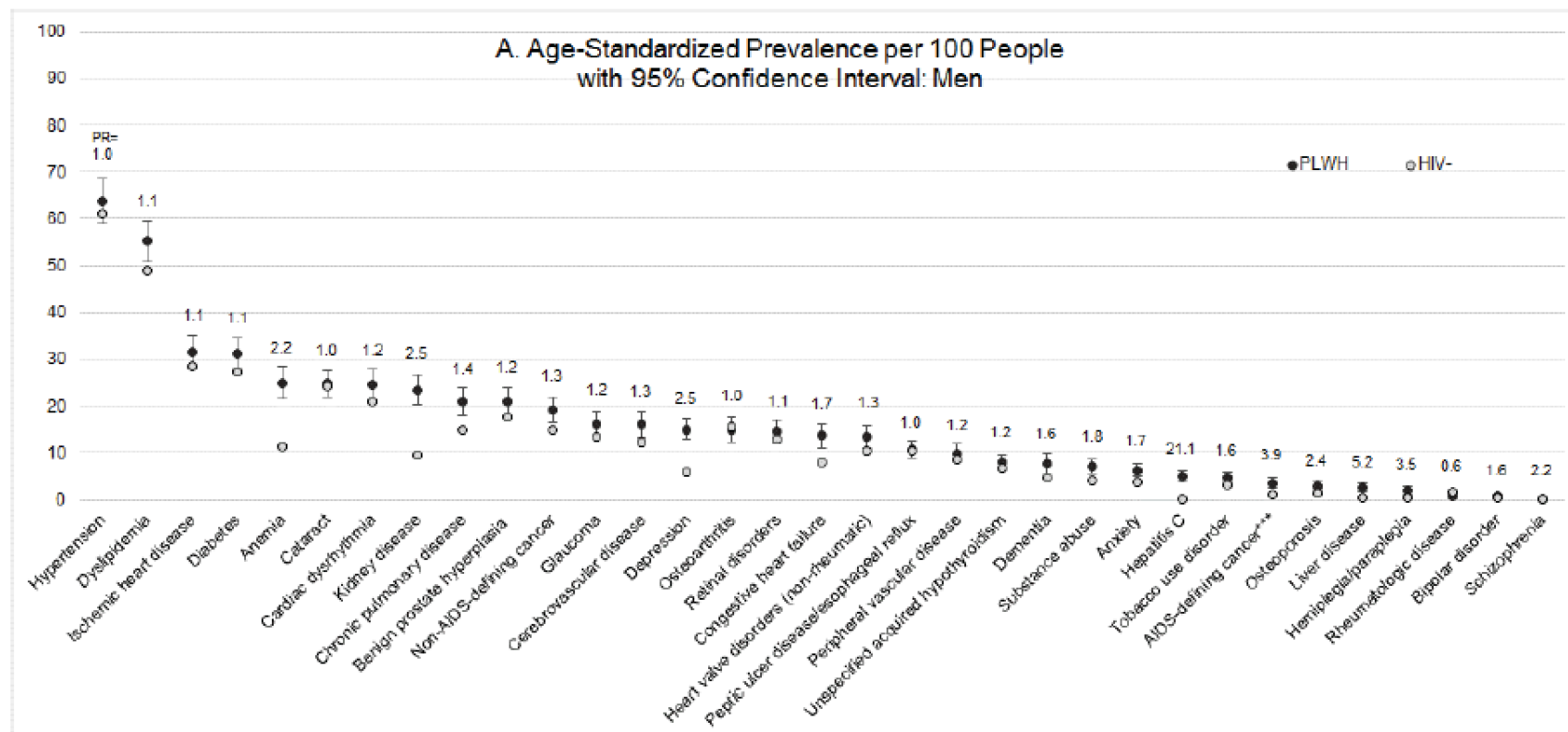
Medicare Comorbidities HV+ vs HIV-

Age-Sex-Standardized Prevalence per 100 People
with 95% Confidence Interval

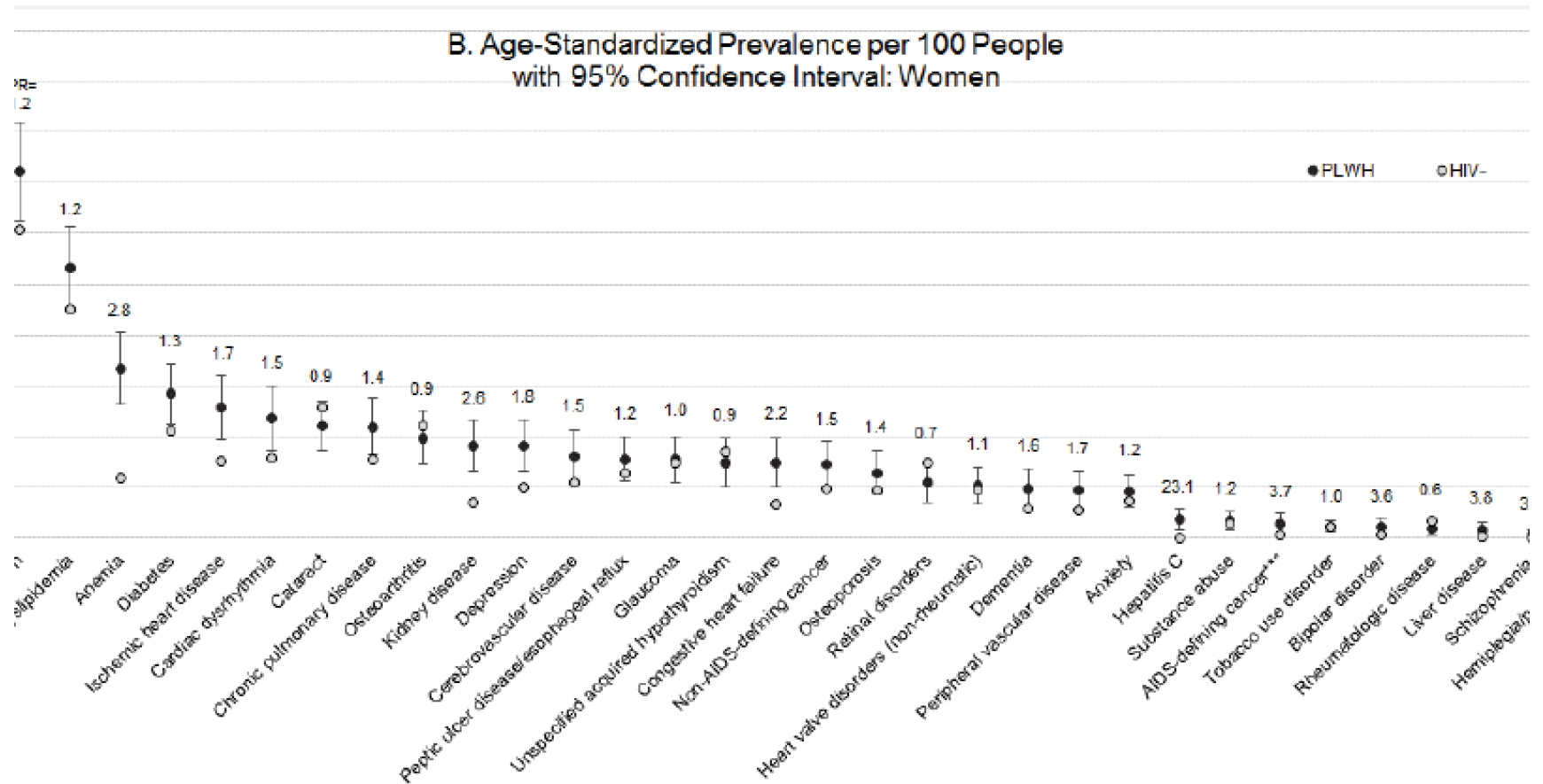


Comorbidities Prevalence Medicare HIV+ vs HIV-

Supplemental Figure 2A-B. Standardized prevalence of non-HIV conditions and AIDS-defining cancers per 100 people with 95% confidence intervals and prevalence ratios for PLWH versus HIV-negative individuals for (A) men and (b) women



HIV+ women vs HIV- women



HIV+ men vs HIV- men

Aging Concerns

- CDC Report in 2015: 150,000 over 60 years old.
- by 2030 **75% > 50 years age**: 85% will have CVD; 30% malignancy; 25% diabetes
- Mean age of HIV+ increase from 45 to 55
- Average **cost of NCD care will double** or more for some for older PLWH due to comorbidities & be 50% of healthcare costs for >50

- only study finding **increasing death rates** due to comorbidities. ATHENA Cohort Glasgow 2018
- Despite recommended ART immediately 50 – 60% NOT virally suppressed.
- **immune activation** persists despite long term viral suppression & CD4 poor response persists despite viral suppression.

Multimorbidity Increases Death Rates -

Multimorbidity and mortality

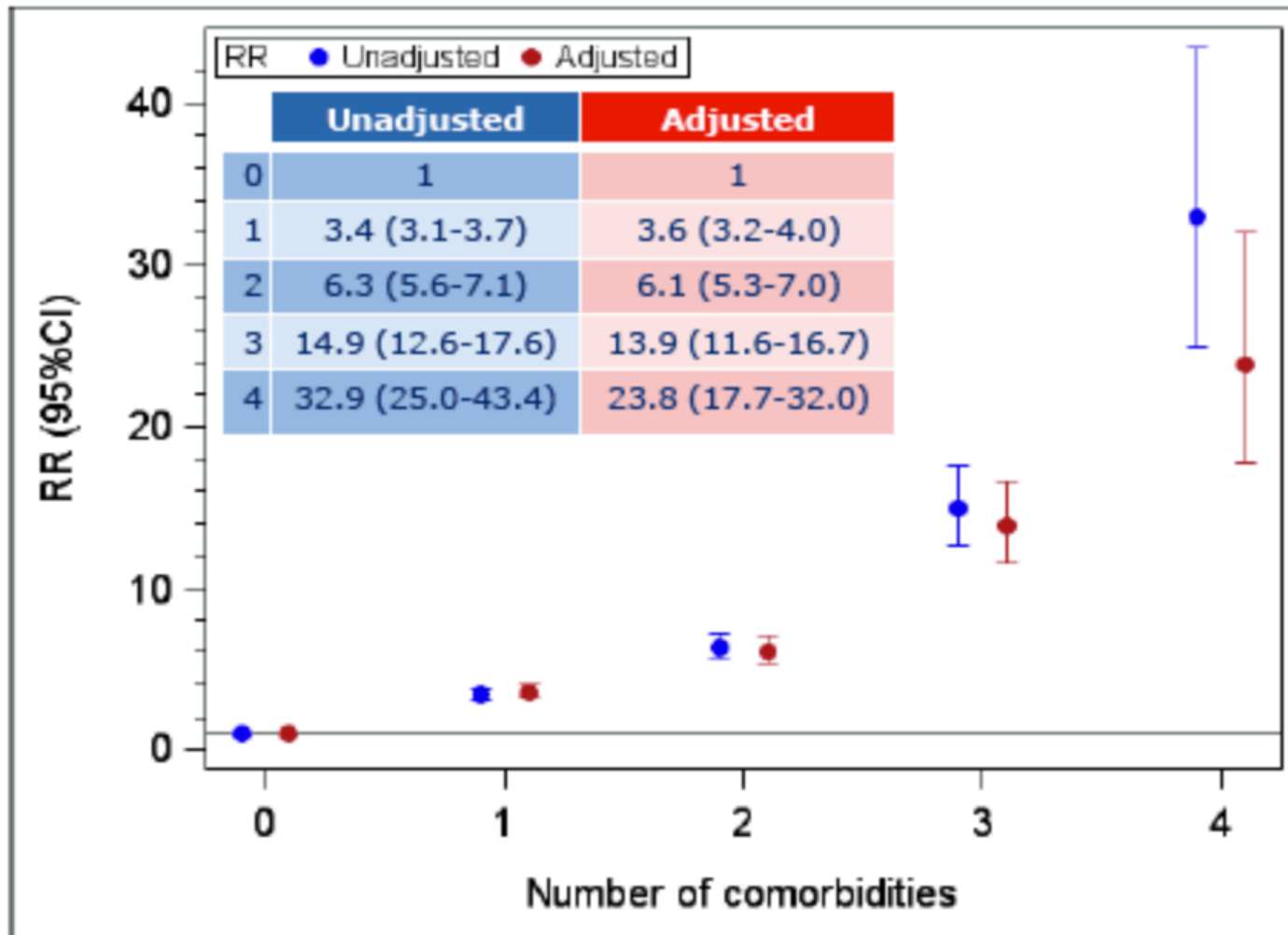
- 30% >70 have 3-4+ comorbidities.
- HIV+ Women have higher multi-comorbidity rates at younger ages than men. Death rates higher in women. Menopause?

Crude mortality rates

Multimorbidity	PYFU	Deaths	Rate /1000 PYFU
0	152,088	899	5.9 (5.5-6.3)
1	38,361	805	21.0 (19.6-22.5)
2	11,476	404	35.2 (31.9-38.8)
3	2,025	164	81.0 (69.1-94.4)
4+	306	53	173 (130-226)

Adjusted Death Rates Increase

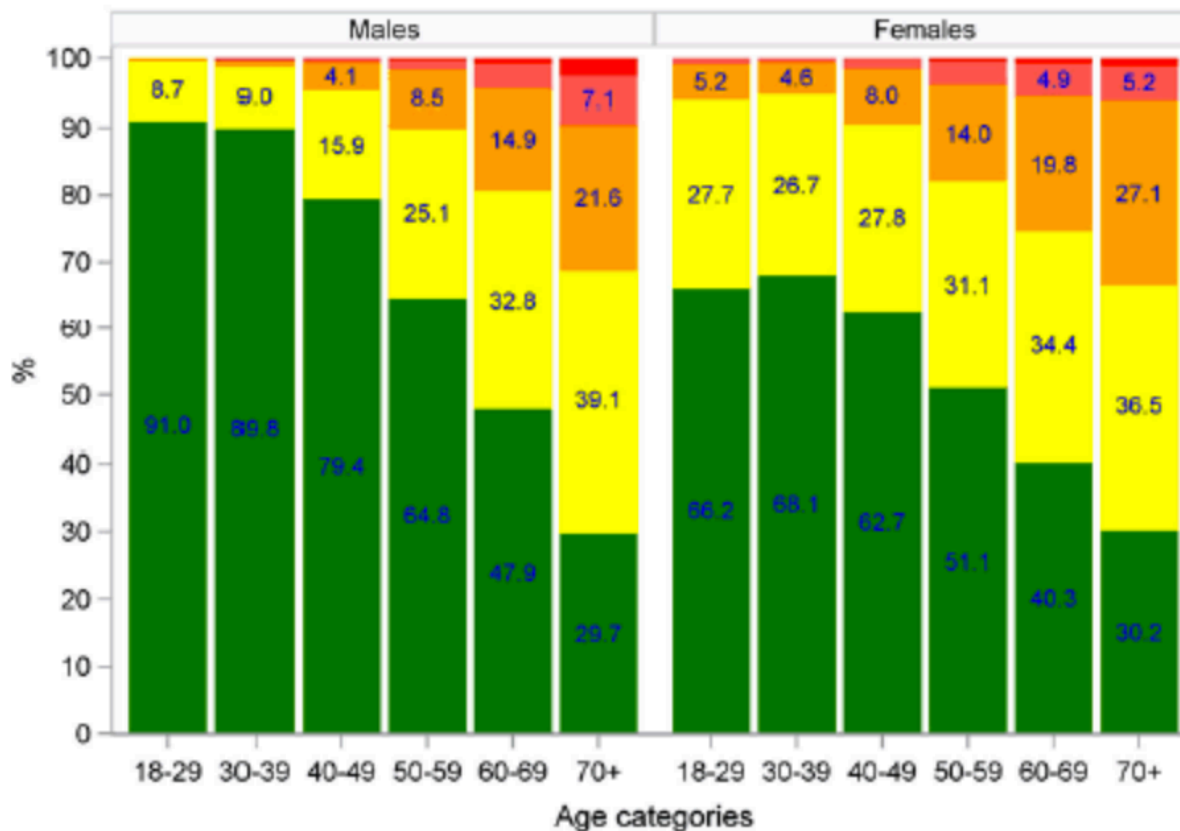
Poisson regression



Women

- Women fare worse

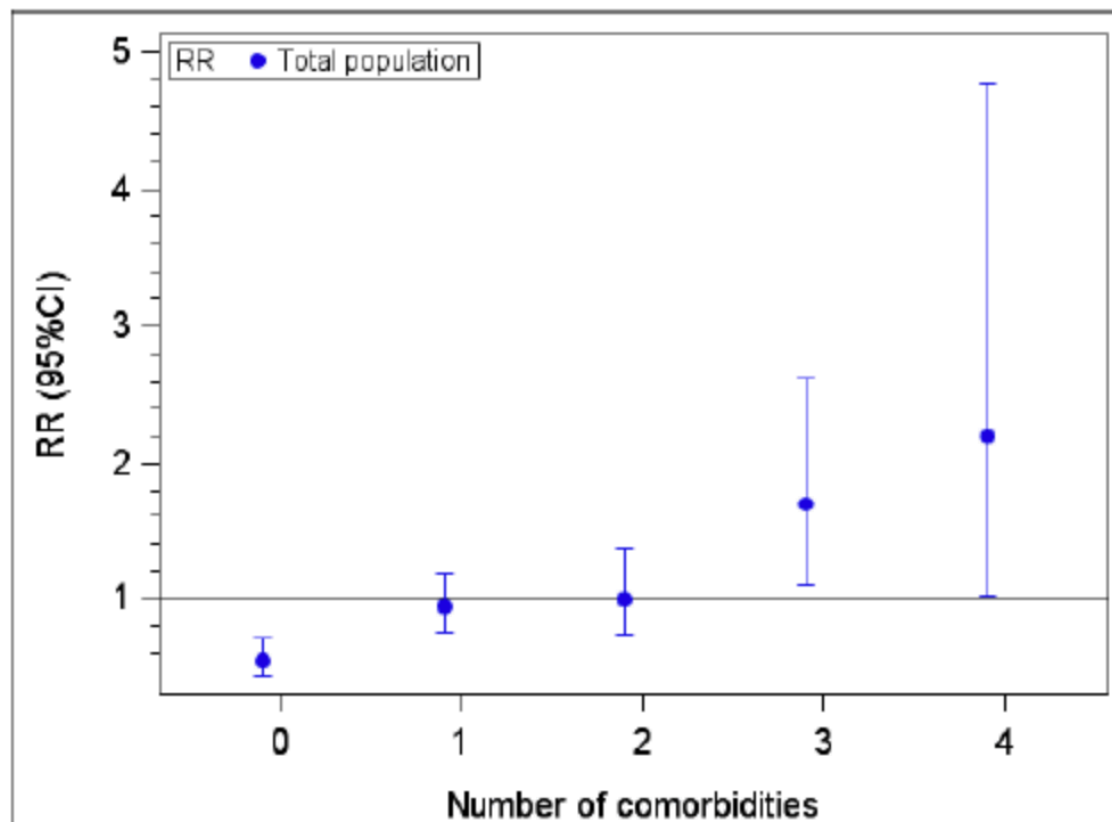
Multimorbidity by age and gender



Number of concomitantly diagnosed conditions

■ 0 ■ 1 ■ 2 ■ 3 ■ 4+

Multimorbidity and mortality: women relative to men



	Total population
0	0.55 (0.43-0.70)
1	0.94 (0.76-1.18)
2	1.00 (0.73-1.36)
3	1.69 (1.09-2.61)
4	2.21 (1.02-4.77)

Older Patient Concerns & Needs in Clinic Now

Care & Services

- **Mental Disability Health Services & Substance Abuse:** In NYC/Mt Sinai “most older HIV + have some degree of cognitive impairment” Yet Mental Health Services provision/insurance is spotty.
- **Physical disability**
- **STIGMA, self-stigma** - all these rise to New Levels in older 65+. is **MUCH greater** in 60+: self-stigma, blame, abandonment by all including healthcare, advocates, govt officials
- **Navigating healthcare system.** unable to get to medical visit- wait months for appointments
- **Healthcare literacy, access, understanding lacking in all despite education level**
- **Cognitive impairment**
 - Frailty
 - Gait/walking Impairments
 - Osteoporosis, falls, fractures Increase – disability & **mortality** increased
 - homebound
 - mentally & physically challenged, impaired, disabled
 - unable to perform normal daily activities
 - socially isolated, lonely

Older/Aged Patient Concerns

PHYSICAL DISABILITY / Unable to Perform Normal Daily Activities:

- **Fatigue, low energy (mitochondria damage?)**
- **Neuropathy, pain, opioid use**
- **Fatty liver ignored**
- **Unable to pay bills (evicted),**
- **shop for food**
- **Anxiety ridden, scared**
 - feel abandoned
 - depressed
- **Deprescribing POLYPHARMACY, ADHERENCE:** what is adherence level in older HIV+ >65 with multicomorbidities ?

New Care Model Needed

- Despite RWCA services many are NOT getting needs met.
- We need to structure Care in the clinic and community in the USA to meet the changing needs of the HIV patient population in care who are aging

Implementation Study Proposed

- Study would provide added components of care & services and evaluate if there is improvement over time in QOL:
- Evaluate **New Care Model**
- Does IT, telemedicine & other care/service components provided through this study improve outcomes QOL, compliance, adherence

New Care Model

- **Longer visit time** with doctor: NY from 20 to 40 minutes;
- **reimbursement** capacity needed for doctor/clinic
- **Geriatric** care in clinic
- **IT/telemedicine** visits to patients; aging IT social networking
- **Home monitoring: viits, telemedicine**
- **Insufficient care coordination** - Better communications between PCP, specialist & PLWH
- **Dedicated aging nurses**, staff with low case load
- **Education for older PLWH regarding their conditions**: prevention, care, treatment
- **Include CAB with PLWH >60** who represent this group “suffering” with needs, unmet needs
- Monitor, collect data & evaluate impact of **substance abuse**

Research Questions / Needs

Real-Time Data Collection & reporting, Answers in 1 year:

Research Question Examples:

1. **Bone.** Fosamax follow-up; how many have fractures; what are Vit D levels-associations with ART; post fracture data; how many are homebound, unable to function; what services are needed; difficulty making doctor visits & understanding health & comorbidities
2. **daily living activities:** how are they impacted by frailty, disability, mental health impairment. Identify & quantify on large cohort scale precise activities HIV+ are unable to perform (e.g. food shopping, preparation, home maintenance, pay bills, social isolation)
3. **Geriatric Care** Component in each clinic site in study. Geriatric Clinics: 4 in US –Cornell, UCSF, Mass Gen.
4. **Brain function.** Identify & quantify brain & cognitive function over time to assess if accelerated/progressed in sub-populations.
5. Substance Abuse: quantify/monitor, interventions, outcomes, adherence, death/suicide
6. **Social isolation.** Implement & evaluate programs like online group, nurse IT monitoring, home visit evaluations.
7. **Home Maintenance.** Can we provide service that improves home maintenance.

National Implementation Study Cohort

- Cohort, could be fostered within MACS & WIHS, and perhaps joining all together with other cohorts.
- Real Time Collection & Reporting: we cannot wait 5 years for results. We need to design collection & reporting methods for 1 year.
- Update case reports with required new information on depression, social isolation, etc
- **CAB** representative of this population.

Scientific Research Questions: What is Causing Comorbidity Onset

- Premature, accentuated, accelerated
- We are getting morbidities sooner, at earlier age, in greater numbers
- **WHY** – what is underlying cause - for each organ: kidney, CVD, brain, bones, cancers
- **Immunosenescence**
- **Studies show immunosenescence onset soon after Infection**
- ***Inflammation***
- HIV contribution, lifestyle, behavior
- 2 GREATEST Research QUESTIONS: ***brain & cognitive impairment***
WHY? – ***frailty-muscle/sarcopenia, gait/mitochondria*** disabilities ?