

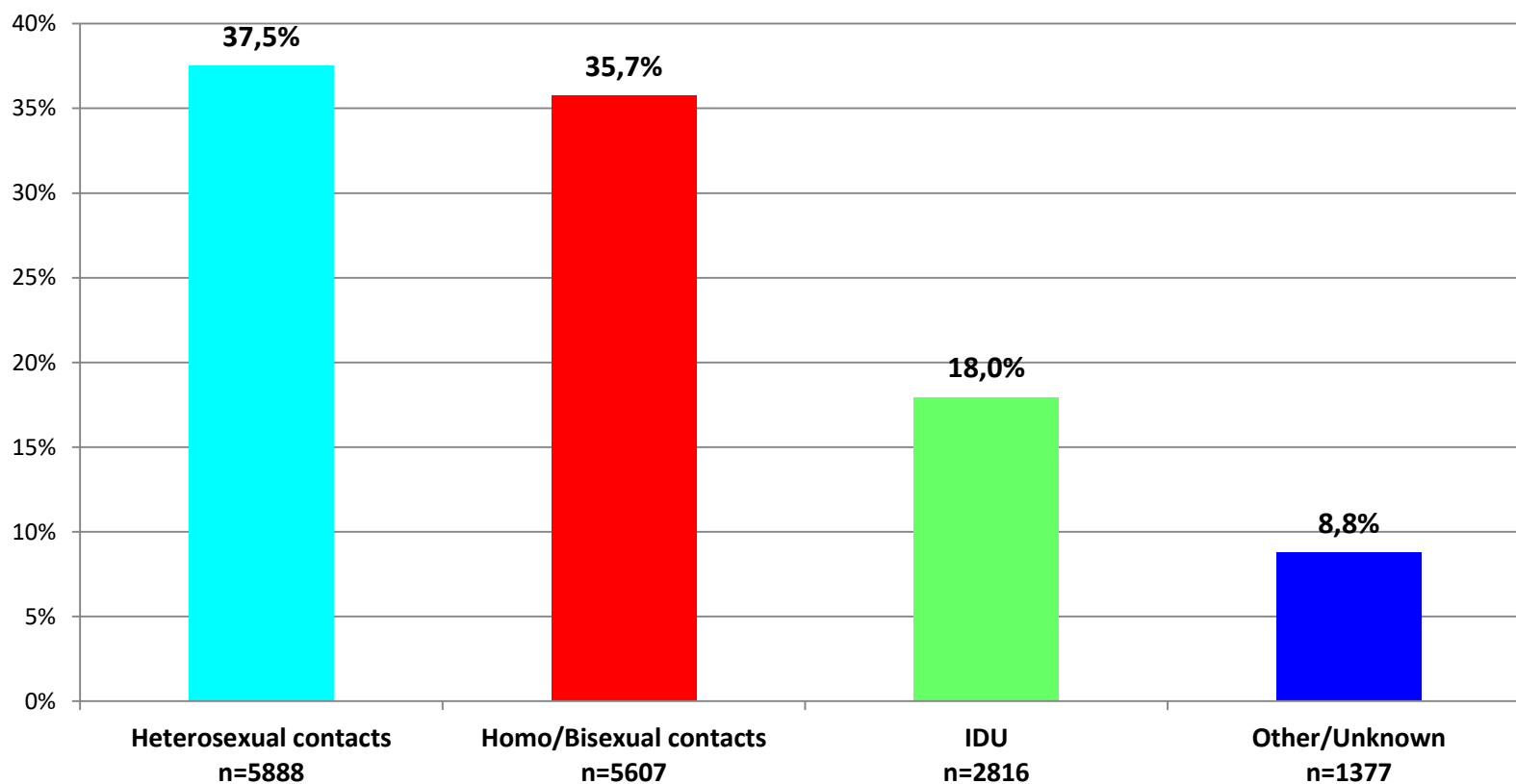


L'invecchiamento del soggetto HIV+: la realtà Italiana alla luce dei dati della coorte

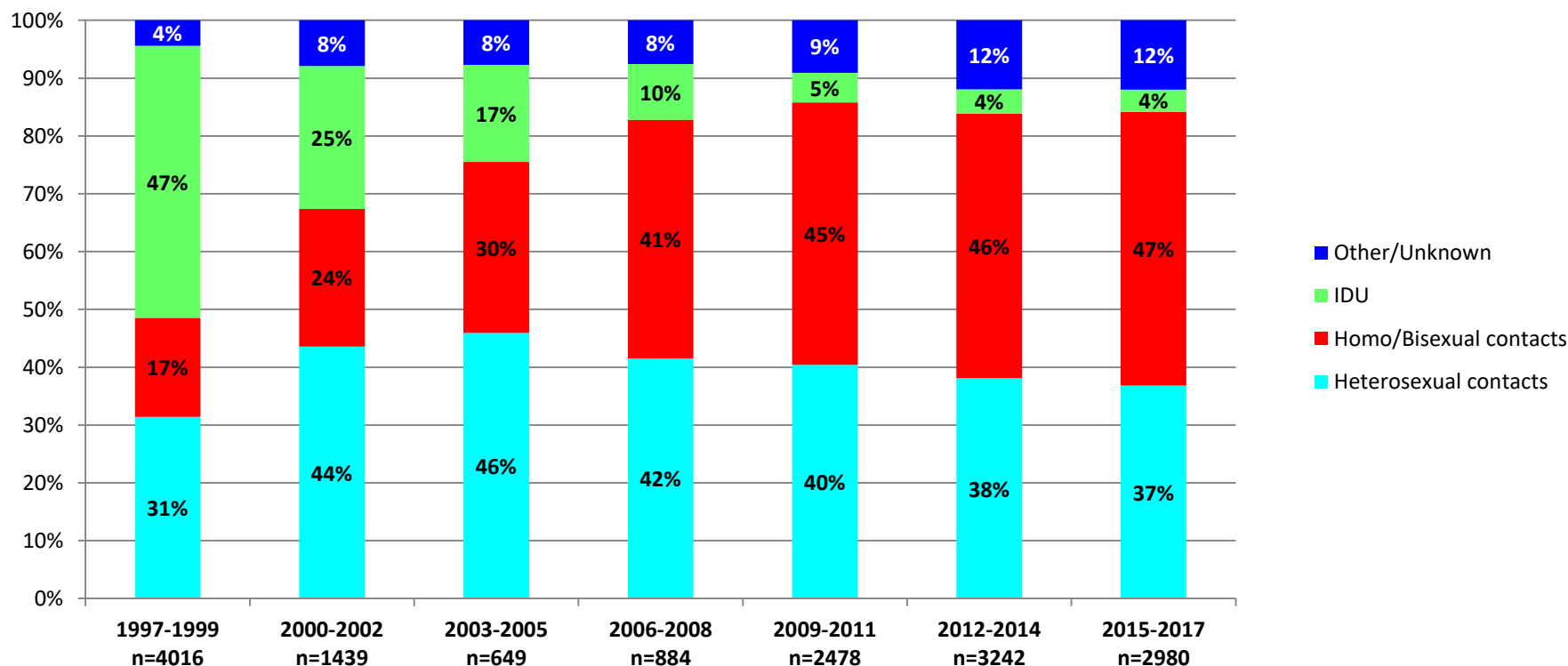
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Mode of HIV transmission in 15688 Icona patients



Mode of HIV transmission according to calendar period of enrollment

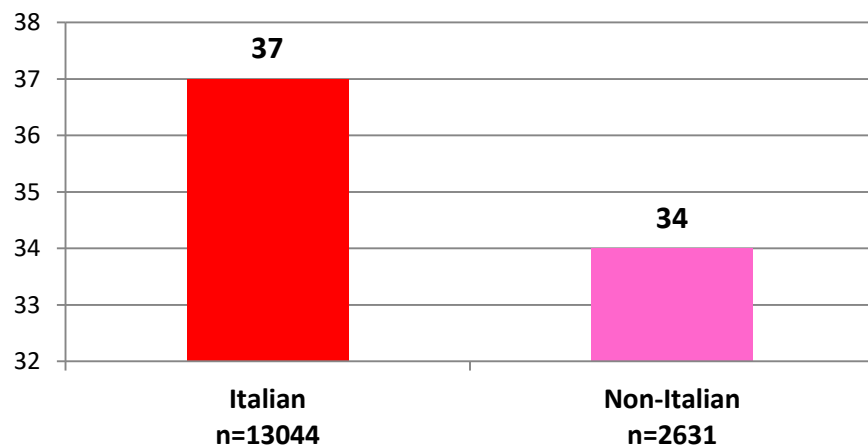


for 2017, first 6 months

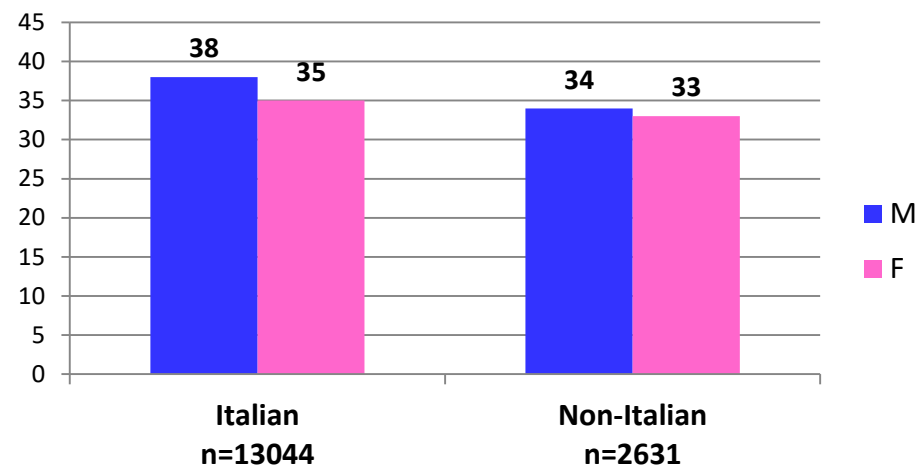
June 2017 Report



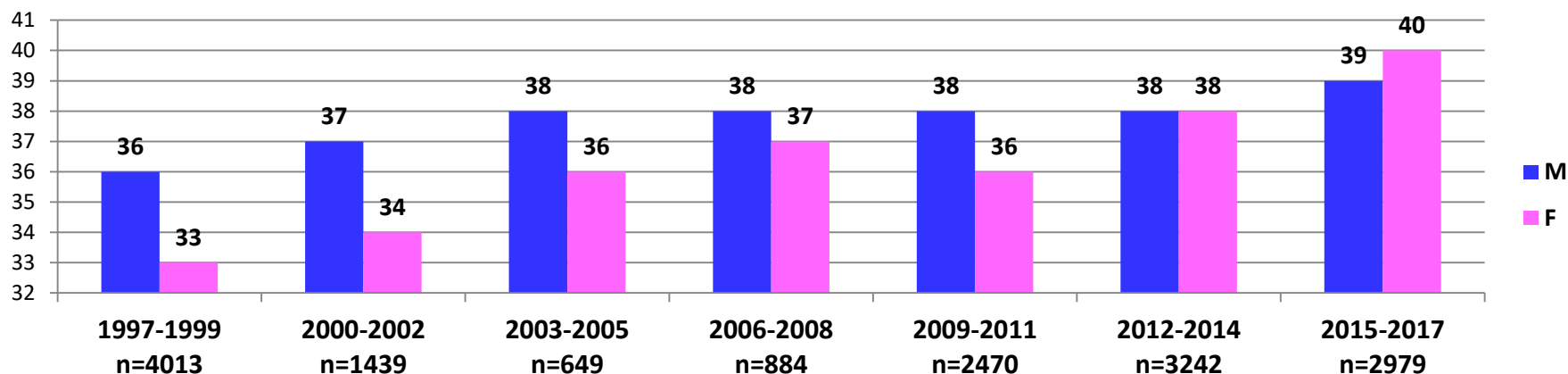
Median age according to nationality at enrollment



Median age according to nationality and gender at enrollment

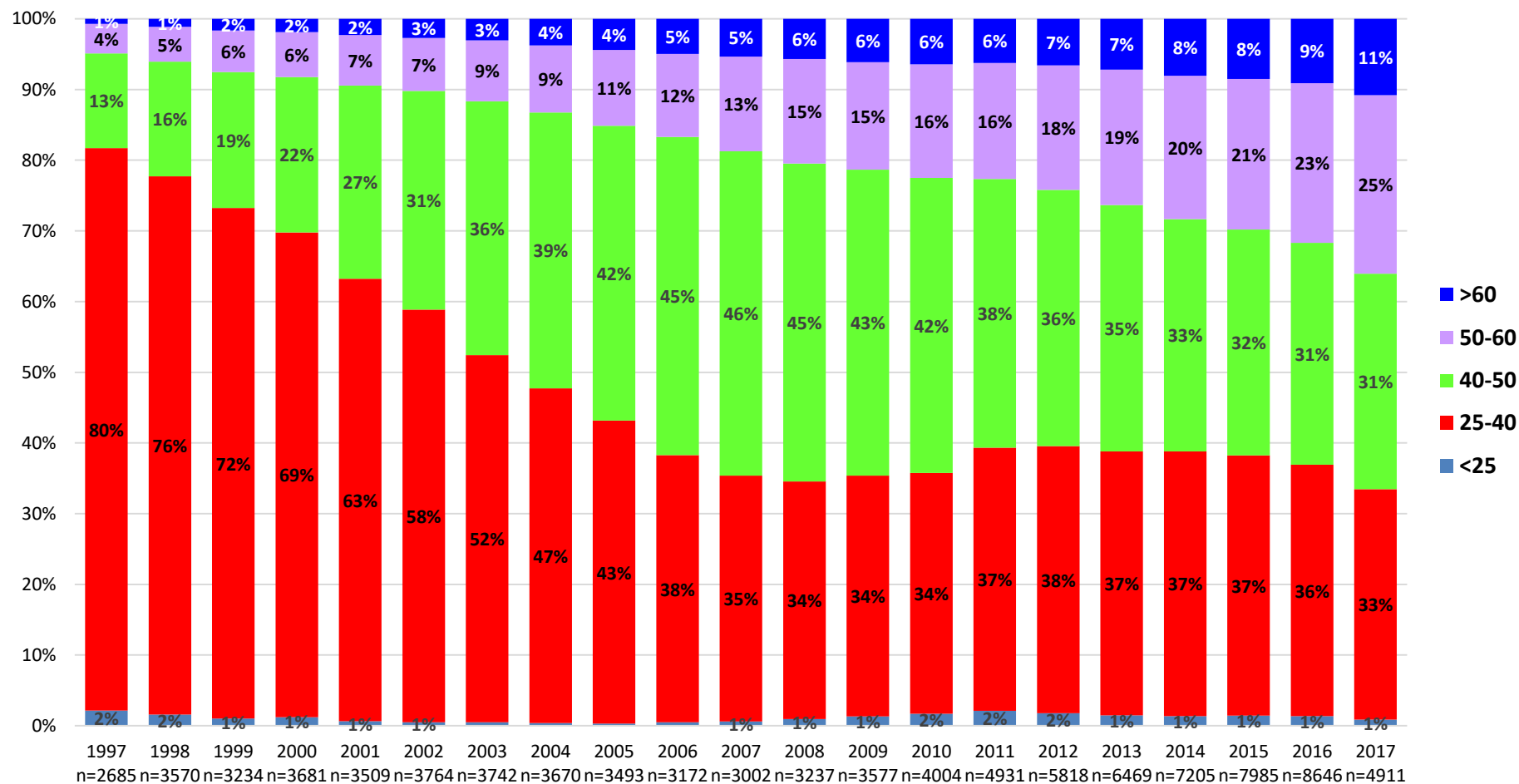


Median age according to calendar year of enrollment and gender



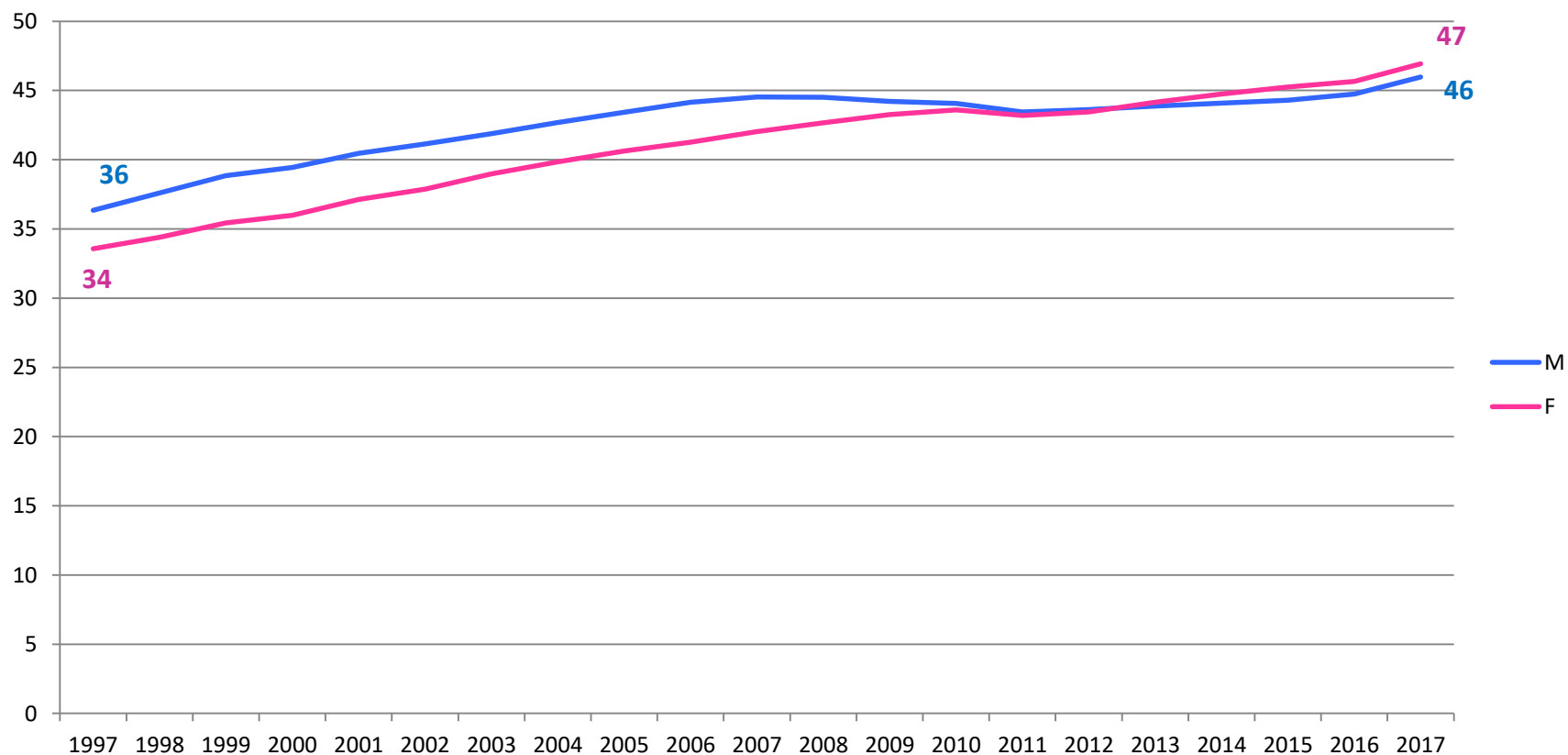


Age strata per calendar year of followup

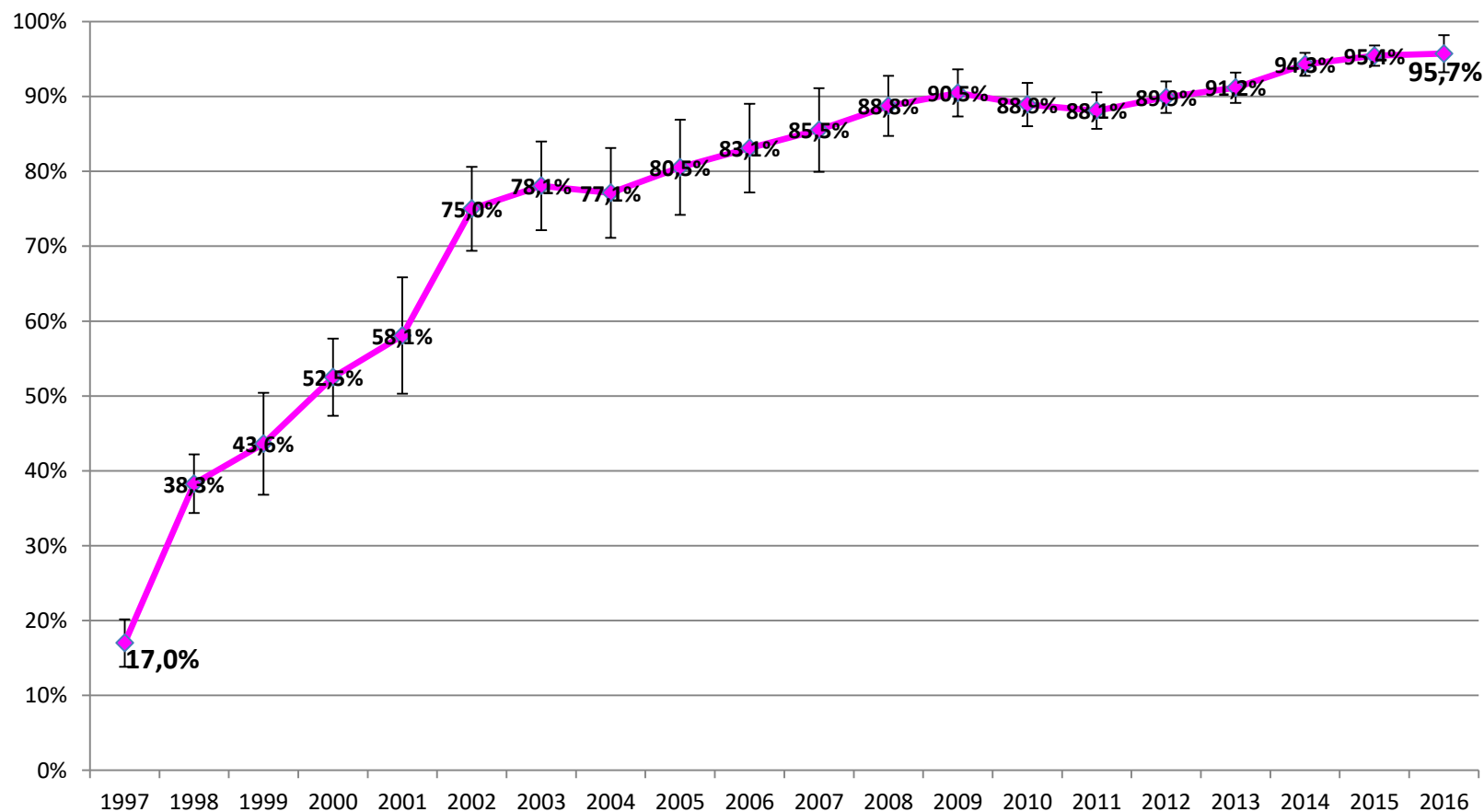




Mean age per calendar year of follow-up and gender

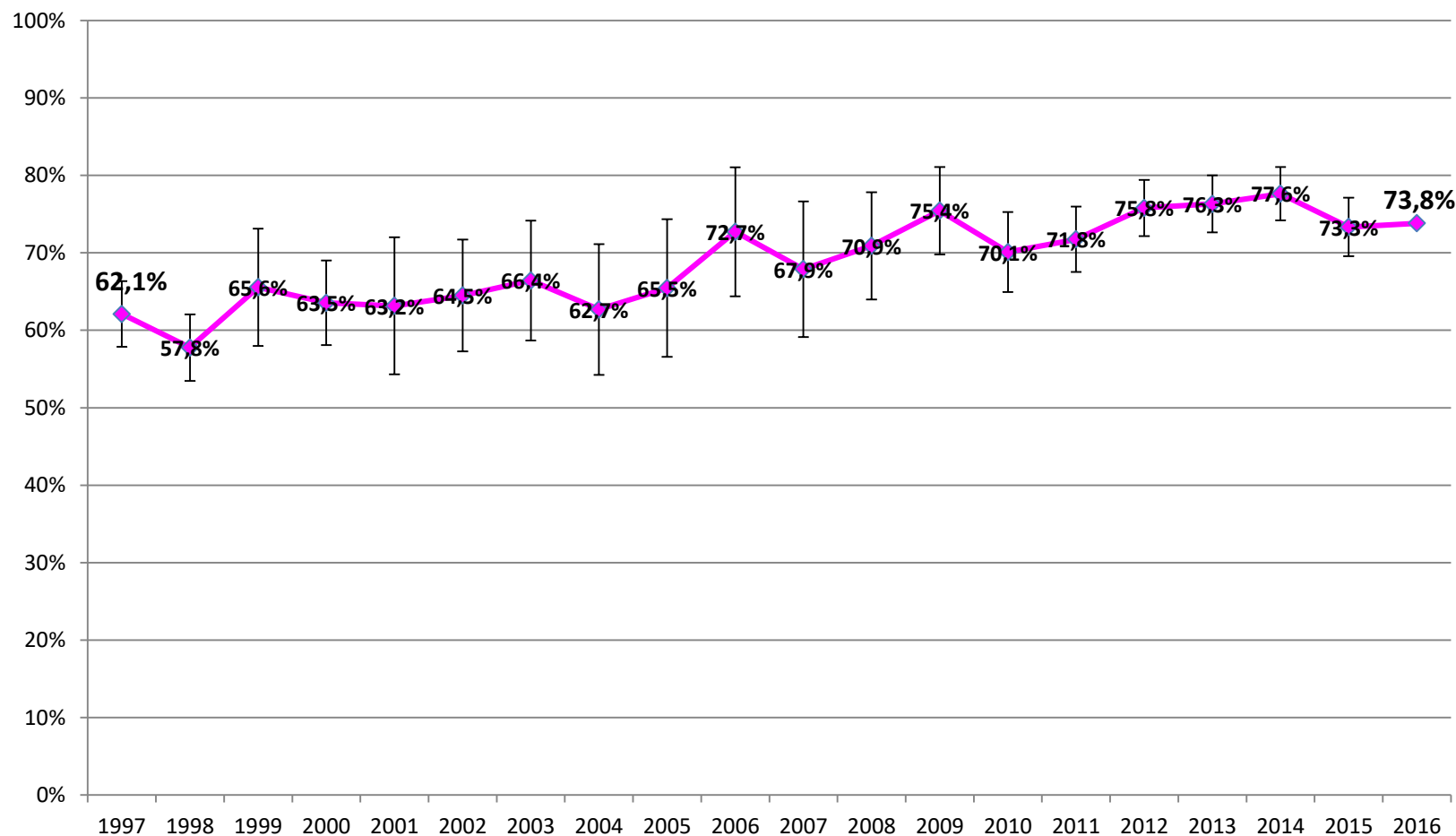


Proportion of patients with a VL \leq 80 copies/mL at 12 months from starting their first ART regimen by calendar year of initiation



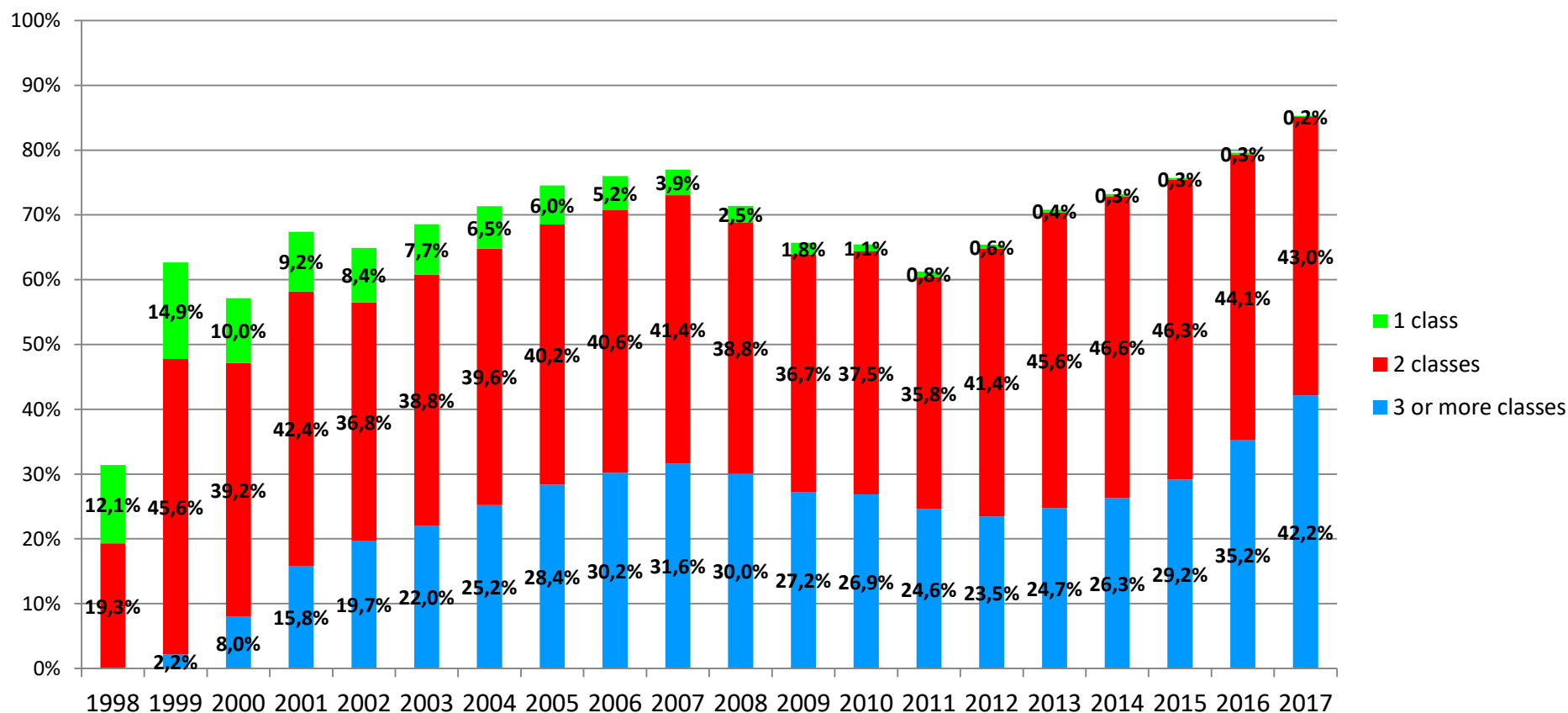


Proportion of patients with an increase of CD4 cells count ≥ 120 cells/cmm at 12 months from starting their first ART regimen by calendar year of initiation





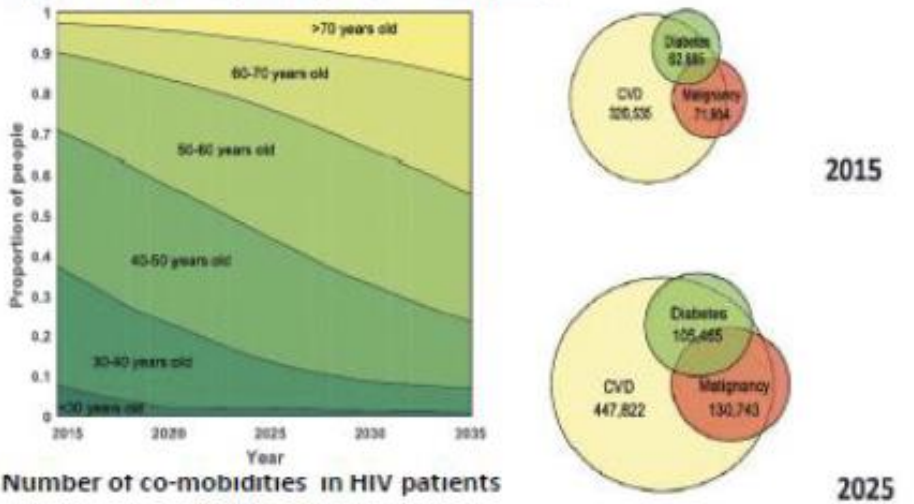
Proportion with previous exposure to one or more ART drug classes for patients in follow up according to calendar year



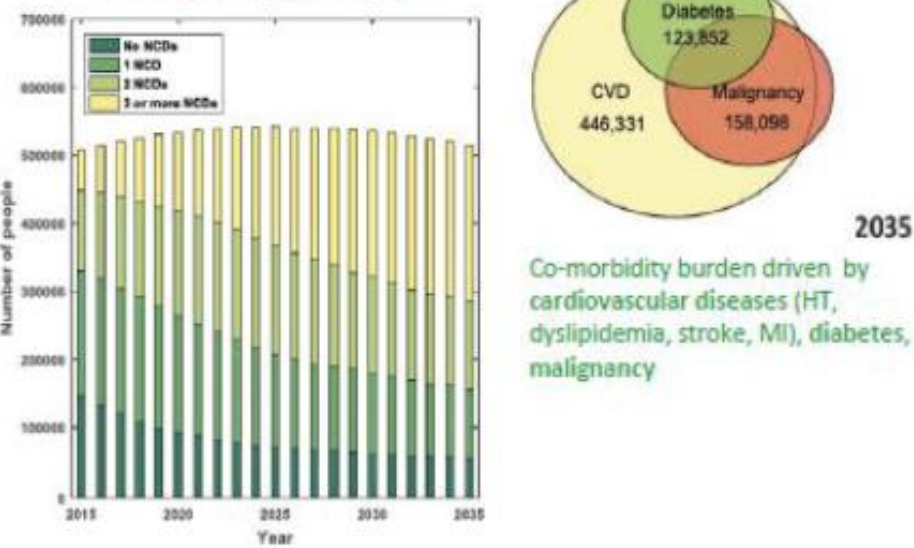
for 2017, first 6 months

Model projections: aging of HIV population and comorbidities

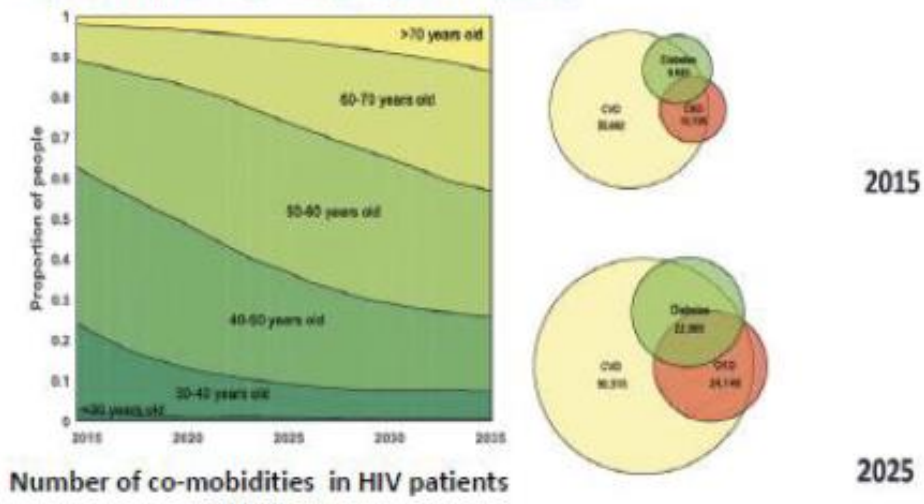
Age distribution of HIV positive patients on HIV therapy in USA (insured patients)
Proportion of pts >50 y: 39% (2015) and 74% (2035)



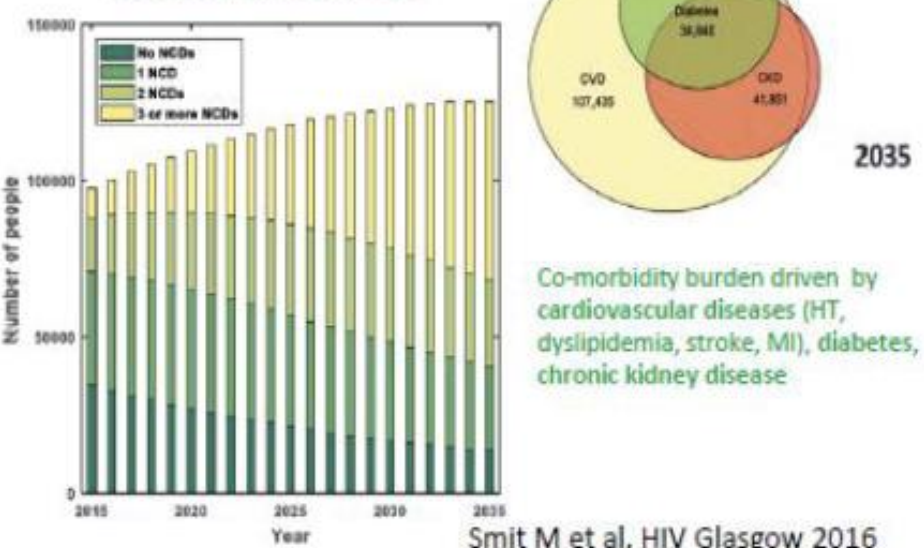
Number of co-morbidities in HIV patients on HIV therapy
Proportion of pts with ≥3 co-morbidities: 11% (2015) and 44% (2035)



Age distribution of HIV positive patients on HIV therapy in Italy (ICONA Cohort)
Proportion of pts >50 y: 30% (2015) and 76% (2035)



Number of co-morbidities in HIV patients on HIV therapy
Proportion of pts with ≥3 co-morbidities: 10% (2015) and 46% (2035)



Assessing co-morbidities in HIV Patients

EACS Guideline recommends screening **male and female** patients for co-morbidities



Lungs

Lung function can be monitored by chest X-rays



Kidney

Regular risk assessments. Kidney function can be tested by blood or urine sample



Liver

Regular risk assessments and monitoring of healthy markers via blood tests



Bone

Bone mineral density monitored via blood tests and measured by DEXA



Brain

Cognition and mental health monitored via questionnaires



Heart

Risk assessments (e.g. Framington score) and blood pressure/cholesterol tests. Patients with heart disease may have further diagnostics e.g. ECG



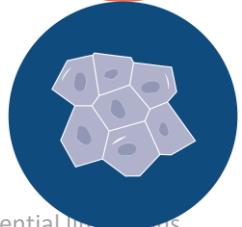
Diabetes

Body mass index assessed and glucose monitored by blood sugar tests



Certain cancers

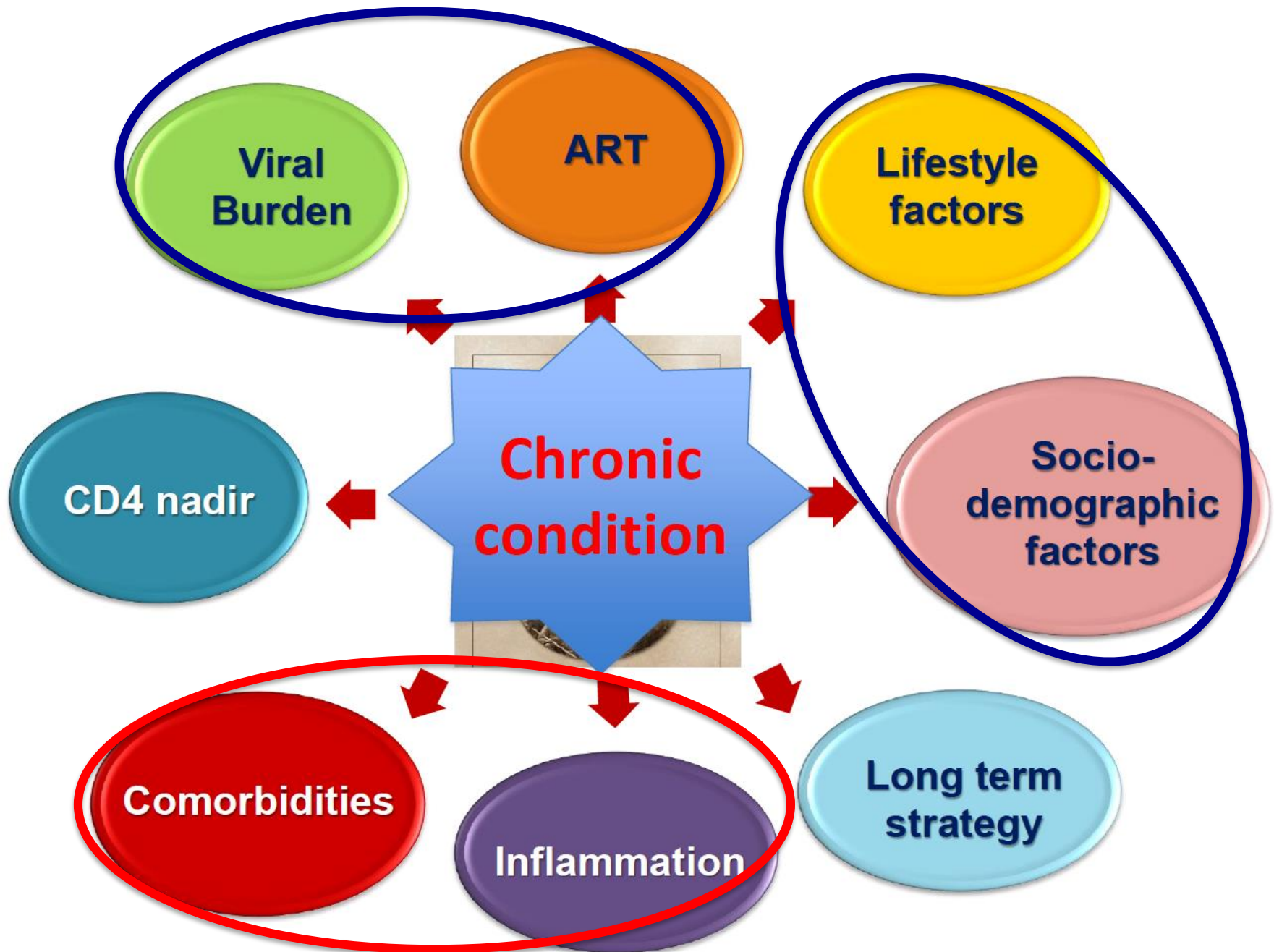
Mammography in women >50 years and cervical smear in sexually active women.



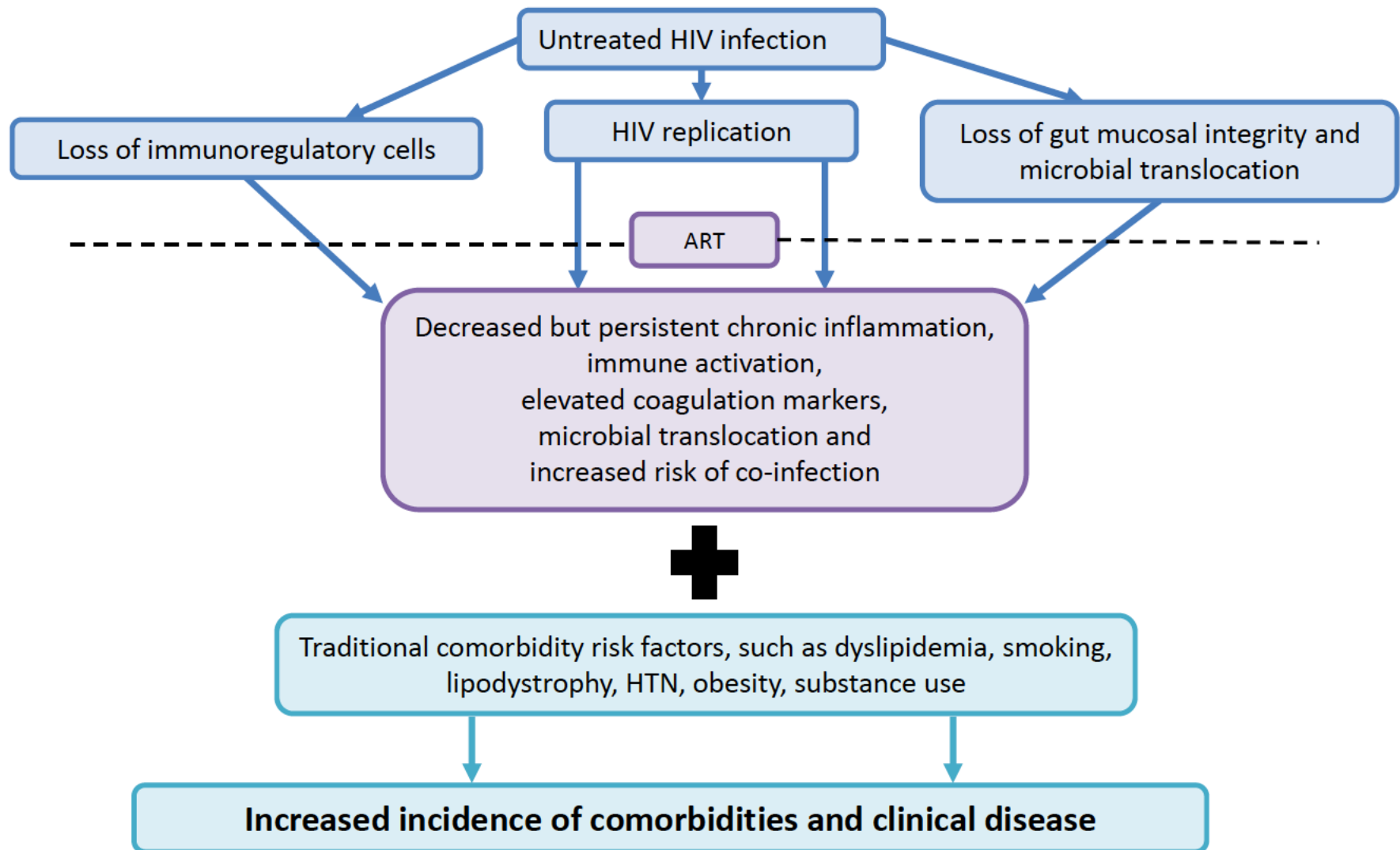
DISCLAIMER: This list is not exhaustive. Please refer to EACS 2017 guidelines for more details on screening tests, populations to screen and potential limitations ECG; electrocardiogram (a test to check for problems with the heart)

Information adapted from EACS Guidelines 2017, <http://www.eacsociety.org/guidelines/eacs-guidelines/eacs-guidelines.html>

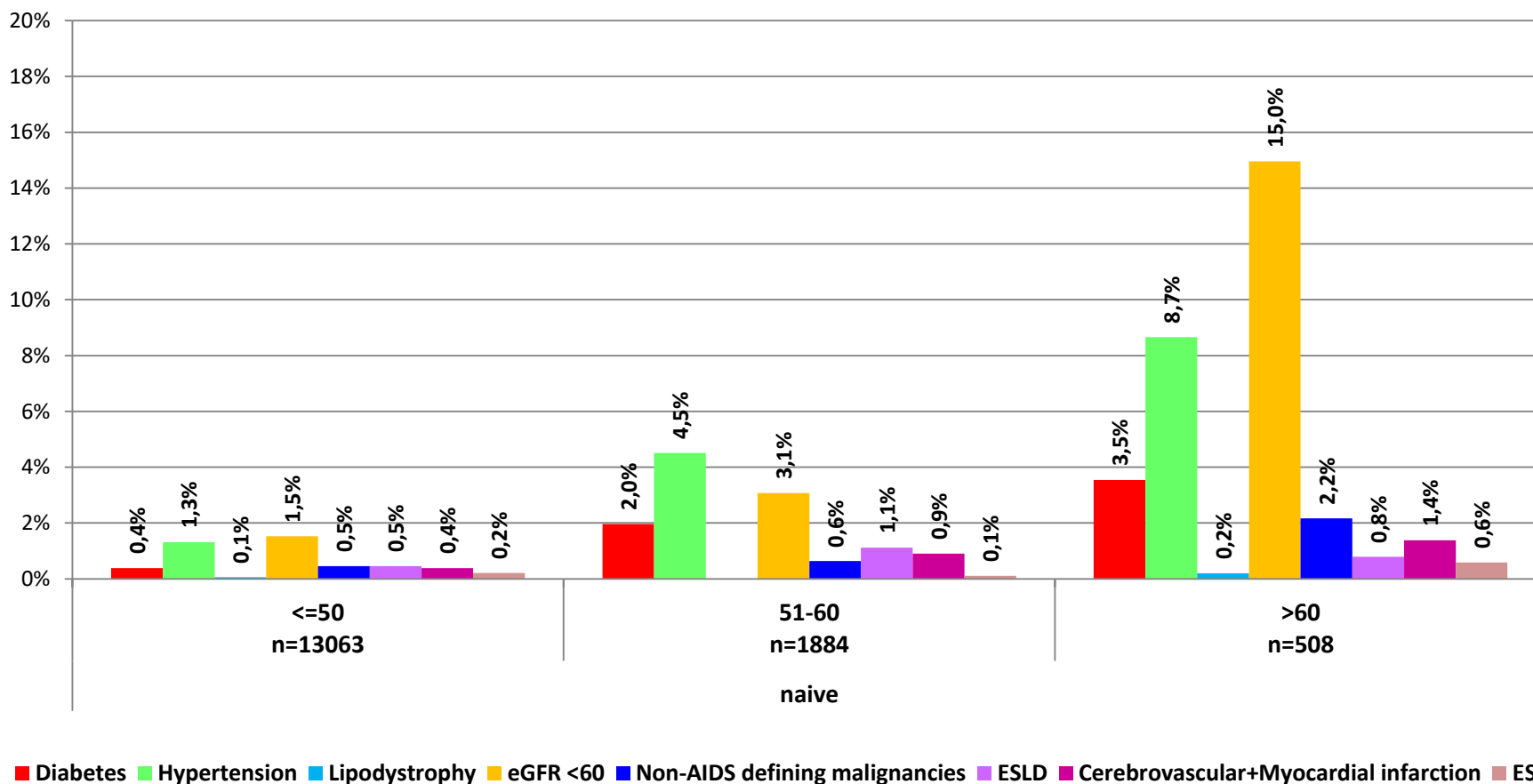
Beyond undetectability: long term risk



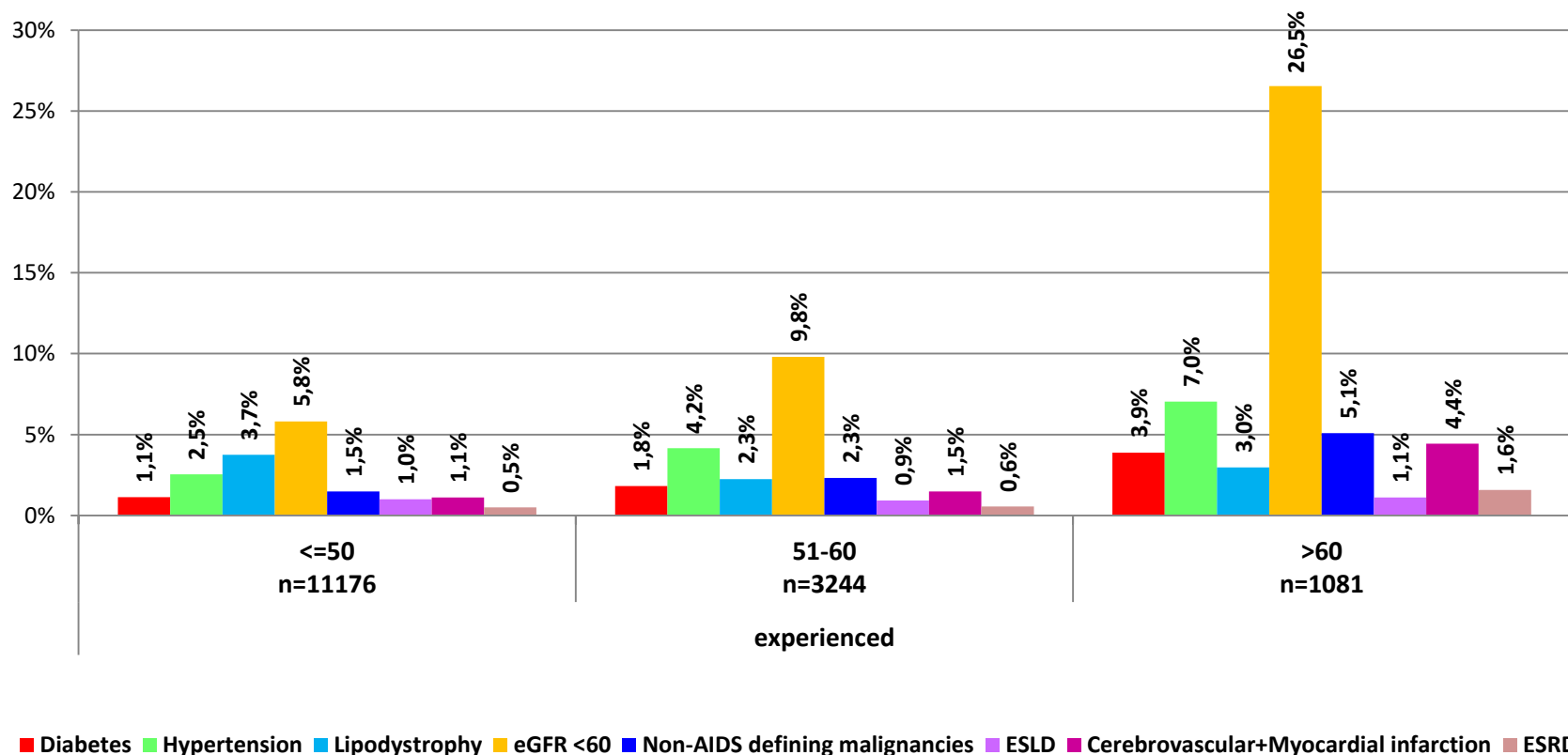
Chronic inflammation is associated with increased risk for comorbidities in HIV-positive patients



Prevalence of different non-AIDS related co-morbidities at different age strata in naive patients



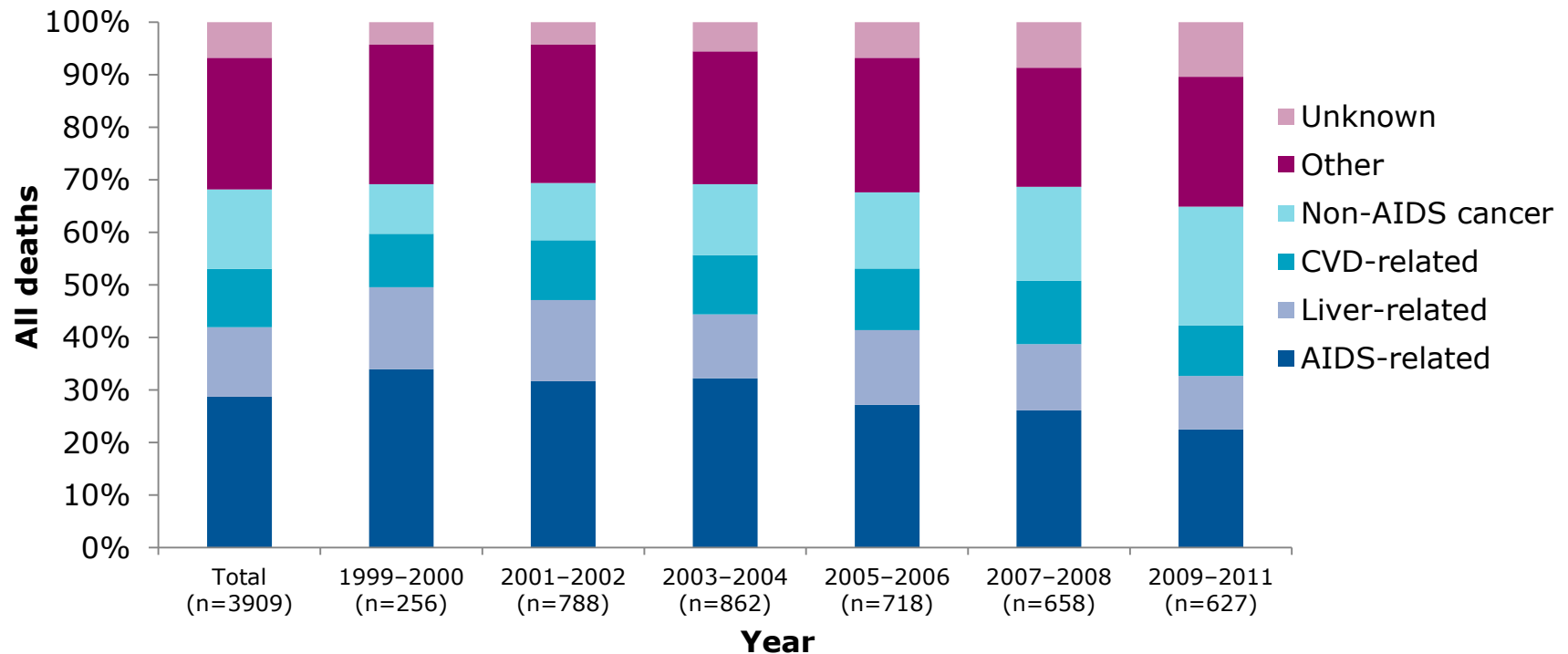
Prevalence of different non-AIDS related co-morbidities at different age strata in ART - treated patients



D:A:D - CAUSES OF DEATH IN HIV-POSITIVE INDIVIDUALS

Prospective cohort of 49,731 HIV-positive individuals from the D:A:D study at 212 clinics in Europe, the USA and Australia, 1999–2011

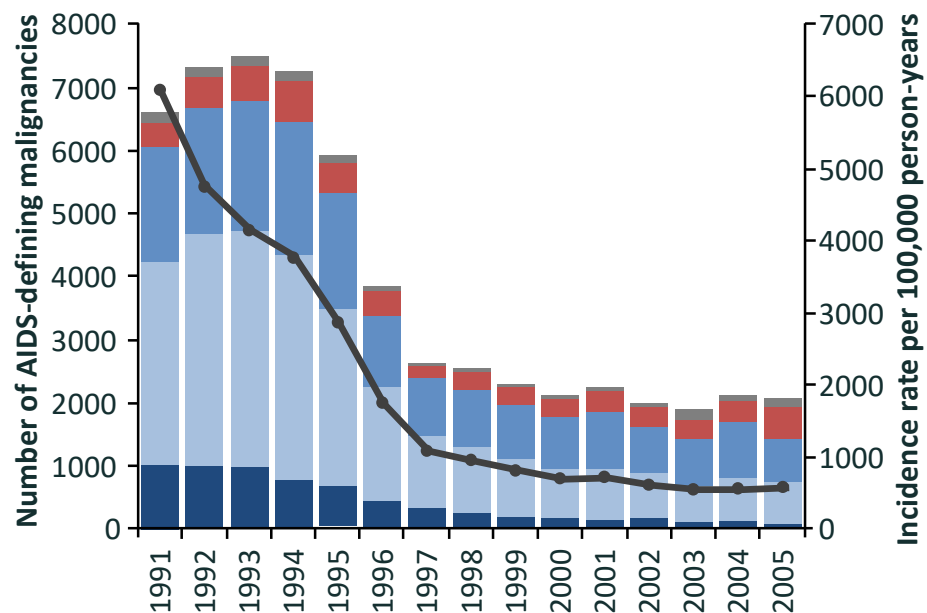
Most common causes of death in HIV-positive individuals



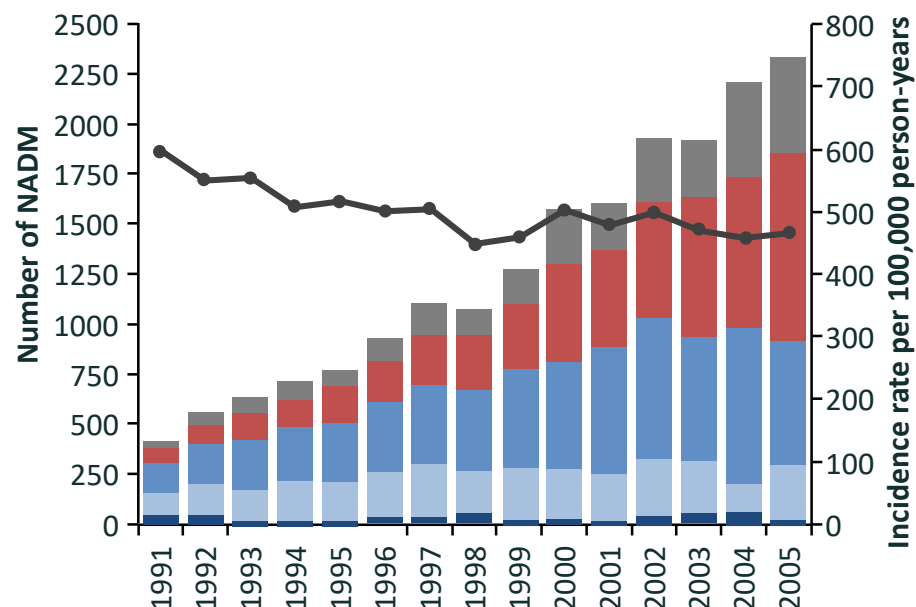
Non-AIDS cancer is the leading non-AIDS cause of mortality and there is no evidence of improvement

Increase in non-AIDS-defining malignancies (NADM)

AIDS-defining malignancy



NADM



0-12 years 13-19 years 20-29 years
 30-39 years 40-49 years 50-59 years 60 years and older

Cancer: Screening Methods⁽ⁱ⁾

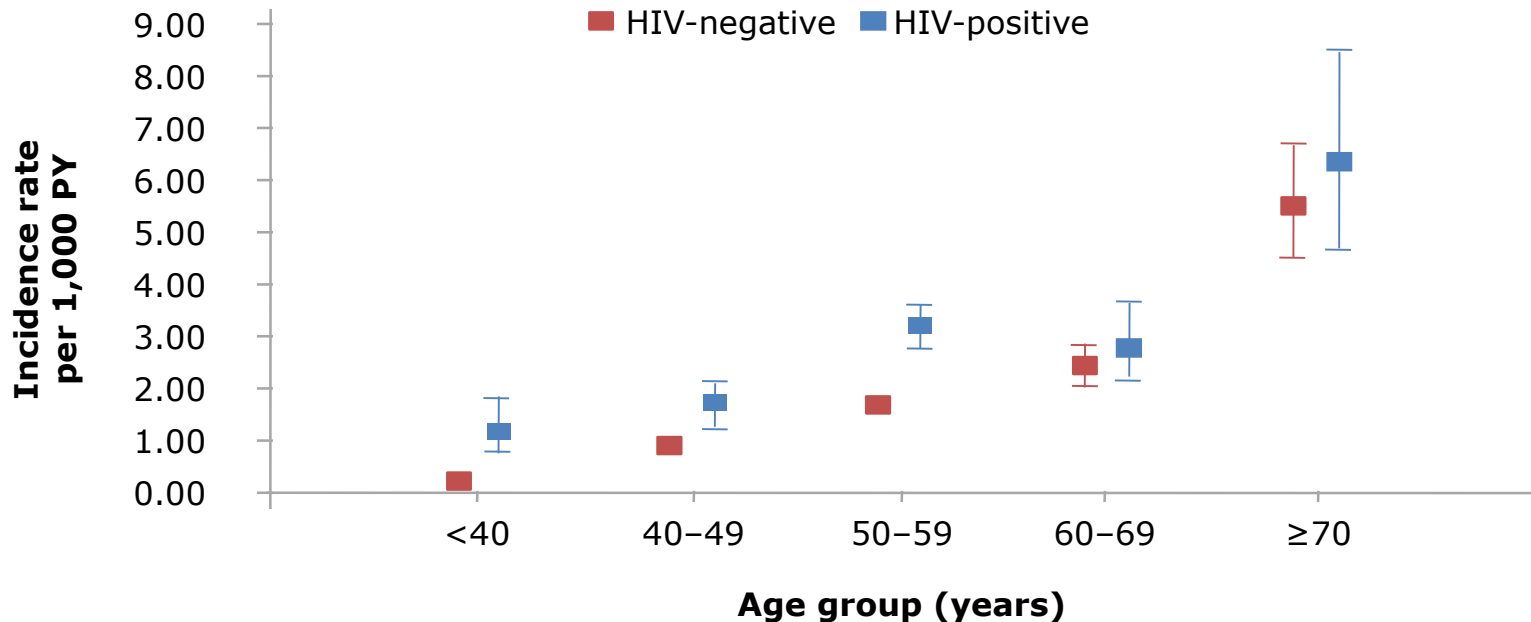
Problem	Persons	Procedure	Evidence of benefit	Screening interval	Additional comments
Anal cancer	MSM	Digital rectal exam ± anal cytology	Unknown; advocated by some experts	1-3 years	If anal cytology abnormal, anoscopy
Breast cancer	Women 50-70 years	Mammography	↓ Breast cancer mortality	1-3 years	
Cervical cancer	Sexually active women	Liquid based cervical cytology test	↓ Cervical cancer mortality	1-3 years	Target age group should include the 25 to 64 years at least. HPV testing may aid screening
Colorectal cancer	Persons 50-75 years	Faecal occult blood test	↓ Colorectal cancer mortality	1-3 years	Flexible sigmoidoscopy at 55-years is an alternative
Hepatocellular carcinoma	Persons with cirrhosis & persons with HBV co-infection at high risk of HCC ⁽ⁱⁱ⁾	Ultrasound and alpha-fetoprotein	Earlier diagnosis allowing for improved ability for surgical eradication	Every 6 months	See pages 52 and 69
Prostate cancer	Men > 50 years	Digital rectal exam ± PSA	Use of PSA is controversial	1-3 years	Pros: ↑ early diagnosis. Cons: overtreatment; ambiguity about size of ↓ cancer-related mortality

VACS

PREVALENCE OF END-STAGE RENAL DISEASE (ESRD)

In a clinical prospective study, 98,687 HIV-positive and demographically matched HIV-negative veterans in the USA contributed 583,178 PYFU, 2003–2010

Overall and age-specific IRs (and 95% CIs) for ESRD



HIV-positive adults have a higher risk of ESRD age-associated events, but they occur at similar ages than those without HIV

Assess and address

Screening and evaluation of HIV-related CKD

Screening for kidney disease

Qualitative assessment for risk of kidney disease

- Race (African American)
- Family history of kidney disease
- CD4 cell count (<200 cells/mm³)
- HIV RNA level (>4000 copies/mL)
- History of use of nephrotoxic medications
- Comorbidities
- Diabetes mellitus
- Hypertension
- Hepatitis C infection

Screening studies at initial HIV visit

- Creatinine-based estimated GFR when ART is initiated/changed, and at least twice yearly in stable patients
- Urinalysis or quantitative measure of albuminuria/proteinuria at baseline, when ART is initiated/changed, and at least annually in stable patients

Evaluation of HIV-related CKD

- Serum chemistry (eGFR)
- Complete urinalysis
- Quantitation of albuminuria (spot UACR or 24hr albumin)
- Markers of tubulopathy (if warranted)
- Renal sonogram
- Review for concomitant nephrotoxic drugs and those that require renal dosing

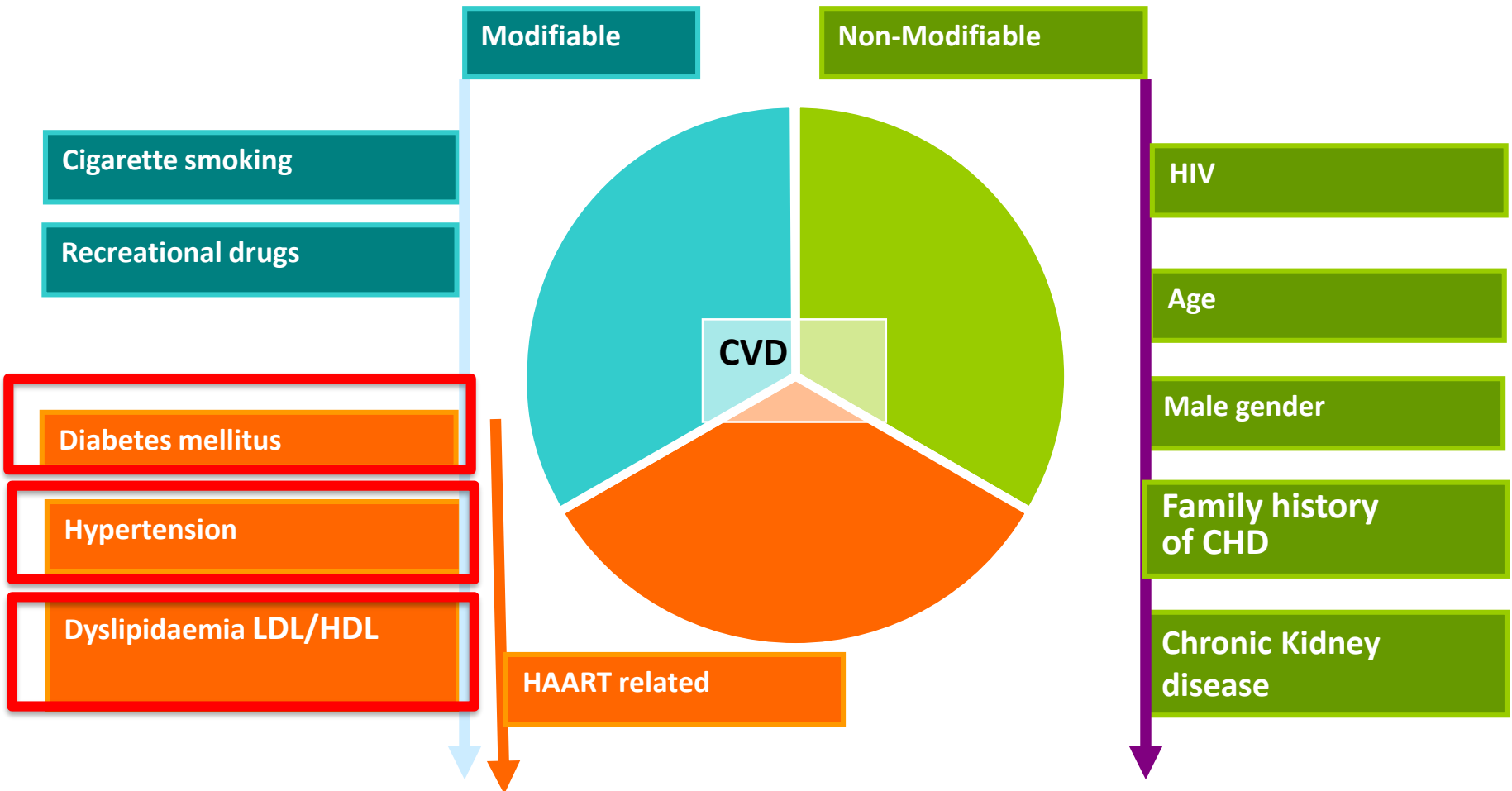
GFR decline by $>25\%$ from baseline and <60 mL/min/1.73m²

Discontinue ART if warranted

- GFR decline by $>25\%$ from baseline and <60 mL/min/1.73m² which fail to resolve after potential nephrotoxic drugs are removed
- Albuminuria >300 mg/day
- Haematuria + albuminuria/proteinuria or increasing BP or for advanced CKD (eGFR <30 mL/min/1.73m²) management

Refer to a nephrologist

Risk factors for CVD



Framingham Risk Score¹

Risk assessment tool for estimating a patient's 10-year risk of developing cardiovascular disease

Age:	<input type="text"/> Years
Gender:	<input type="radio"/> Female <input type="radio"/> Male
Total cholesterol:	<input type="text"/> mmol/L
HDL cholesterol:	<input type="text"/> mmol/L
Smoker:	<input type="radio"/> Yes <input type="radio"/> No
Diabetes:	<input type="radio"/> Yes <input type="radio"/> No
Systolic blood pressure:	<input type="text"/> mm Hg
Is the patient being treated for high blood pressure?	<input type="radio"/> Yes <input type="radio"/> No

This online assessment tool is intended as a clinical practice aid for use by experienced healthcare professionals. Results obtained from this tool should not be used alone as a guide for patient care.

Calculate risk



SMOKING, HTN, AND ALCOHOL CONTRIBUTE TO MI RISK IN HIV

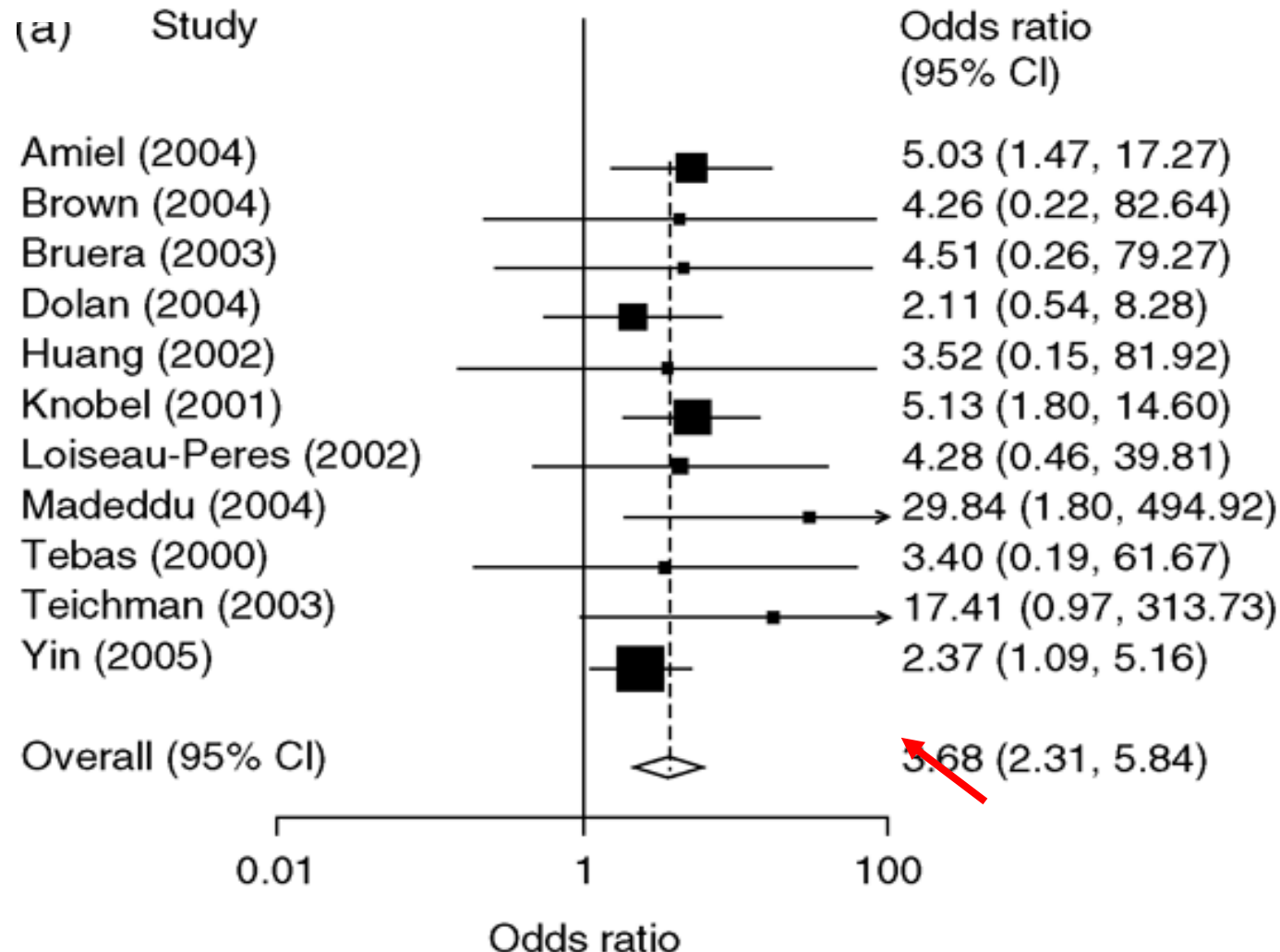
- Retrospective meta-analysis of pts with validated MI events from 7 clinical cohorts within NA-ACCORD from 1/2000 to 12/2013 (N = 29,515)^[1]
 - Population attributable fraction: proportion of MIs avoidable by prevention of modifiable HIV-related and traditional MI risk factors
 - 347 pts (1.2%) had type 1 MI due to plaque rupture
 - Sensitivity analysis added for 16,687 pts (57%) with BMI data, 227 had type 1 MI
- ~ 40% MI reduction achievable through prevention of smoking, elevated TC, or HTN, regardless of BMI

Adjusted Population Attributable Fractions for MI, * ^[1] %		MI	BMI Subgroup
Traditional MI risk factors	▪ Smoking	38 [†]	36
	▪ Elevated TC	43 [†]	39 [†]
	▪ HTN	41 [†]	39 [†]
	▪ All 3 (smoking, TC, HTN)	86	
HIV-related MI risk factors	▪ DM	2	4
	▪ CKD	3	3
	▪ CD4+ cell count	10 [†]	14 [†]
	▪ VL	6	8
	▪ AIDS	2	-1
	▪ HCV coinfection	8 [†]	14 [†]

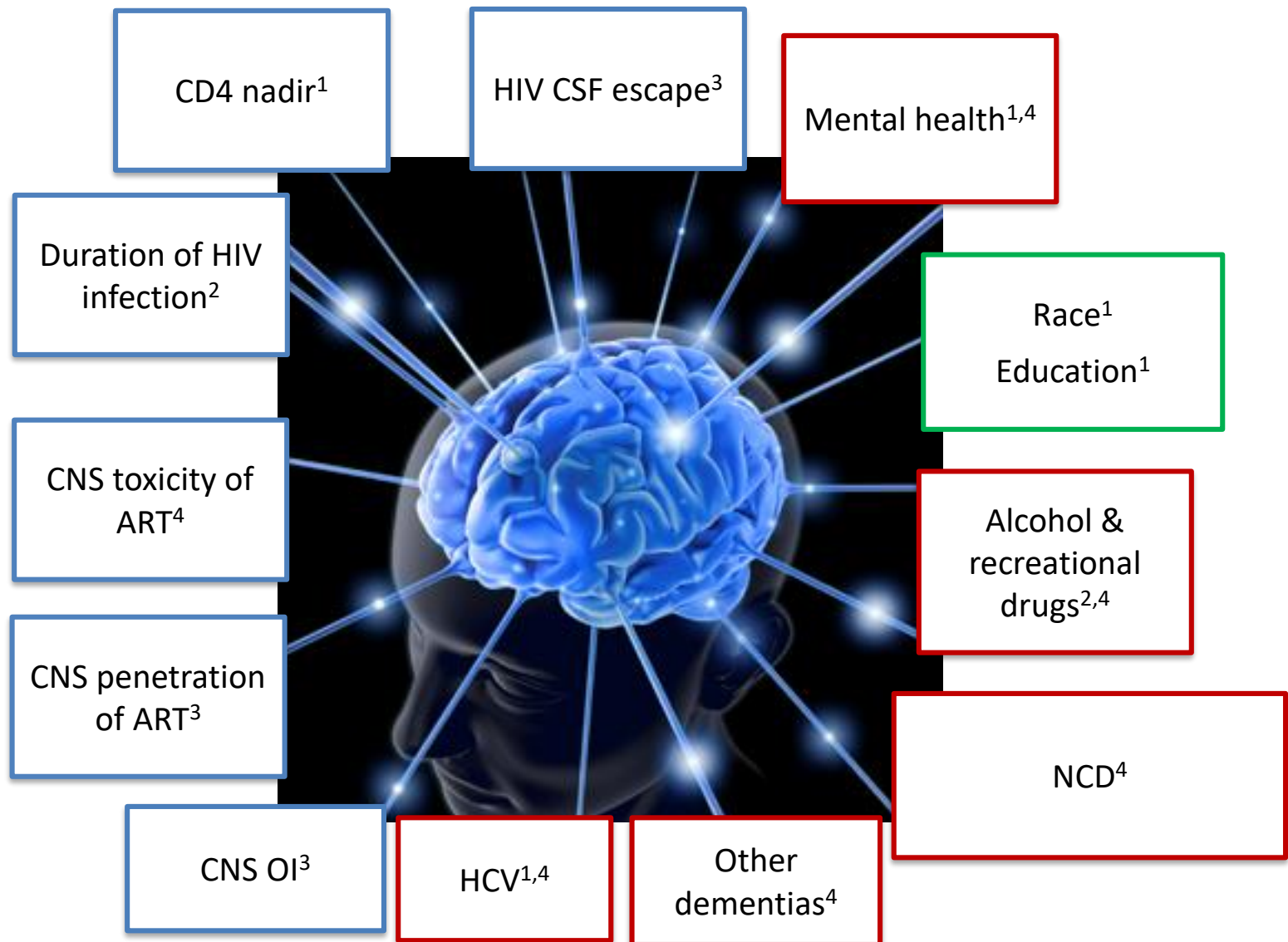
*Adjusted for age, sex, race, and all listed risk factors. [†]P < .05

- In separate study (D:A:D), smoking cessation reduced overall cancer rate after 1 yr, except lung cancer (rate high even after > 5 yrs)^[2]*

Odds of osteoporosis in HIV-infected patients compared with HIV-uninfected controls



Brown and Qaqish. AIDS 2006;20:2165-74



1. Cross S et al. J Neuroimmune Pharmacol 2013;8:1114–1122; 2. Attonito JM et al. Front Public Health 2014;11:105; 3. Ellis R and Letendre SL. Neurotherapeutics. 2016;13(3):471–476; 4. Anand P et al. AIDS Behav 2010;14(6):1213–1226

Depression: Screening and Diagnosis

Significance

- Higher prevalence of depression reported in HIV-positive persons (20-40% versus 7% in general population)
- Significant disability and poorer treatment outcomes associated with depression

Screening and diagnosis

Who?	How to screen?	How to diagnose?
<p>Screening of all HIV-positive persons recommended in view of the high prevalence of depression</p> <p>Populations at particular high risk</p> <ul style="list-style-type: none"> • Positive history of depression in family • Depressive episode in personal history • Older age • Adolescence • Persons with history of drug addiction, psychiatric, neurologic or severe somatic co-morbidity • Use of EFV • Use of neurotropic and recreational drugs • As part of investigation of neuro-cognitive impairment, see page 68 	<ul style="list-style-type: none"> • Screen every 1-2 years • Two main questions: <ol style="list-style-type: none"> 1. Have you often felt depressed, sad or without hope in the last few months? 2. Have you lost interest in activities that you usually enjoy? • Specific symptoms in men: <ul style="list-style-type: none"> – Stressed, burn out, angry outbursts, coping through work or alcohol • Rule out organic cause (such as hypothyroidism, hypogonadism, Addison's disease, non-HIV drugs, vitamin B12 deficiency) 	<p>Symptoms – evaluate regularly</p> <p>A. At least 2 weeks of depressed mood OR</p> <p>B. Loss of interest OR</p> <p>C. Diminished sense of pleasure PLUS 4 out of 7 of the following:</p> <ol style="list-style-type: none"> 1. Weight change of $\geq 5\%$ in one month or a persistent change of appetite 2. Insomnia or hypersomnia on most days 3. Changes in speed of thought and movement 4. Fatigue 5. Feelings of guilt and worthlessness 6. Diminished concentration and decisiveness 7. Suicidal ideation or a suicide attempt⁽ⁱ⁾

EACS Guidelines 2016

HIV pos patients are getting older

- ✓ Chronic degenerative illnesses occur earlier and more frequently than HIV negative population
- ✓ Cancer, CV, renal, bone, and cognitive diseases
- ✓ Screening and monitoring are mandatory to guarantee prolonged life span in healthy conditions