

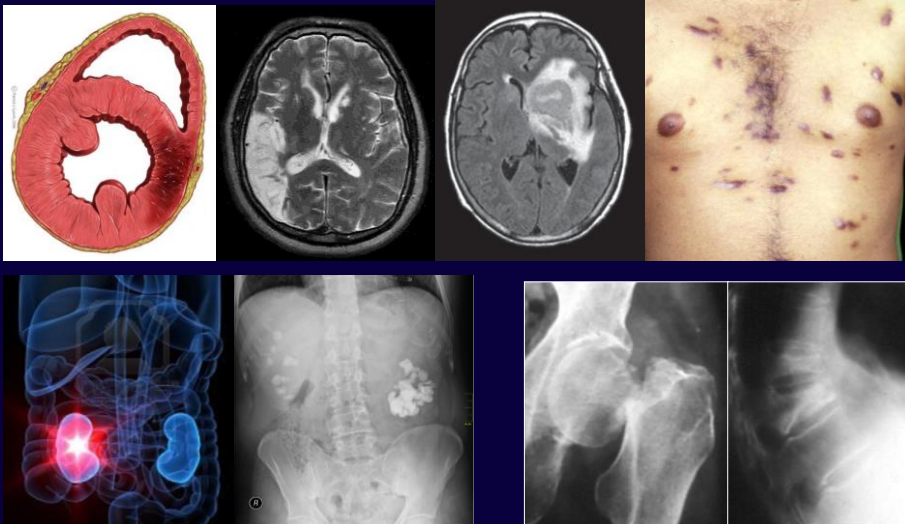


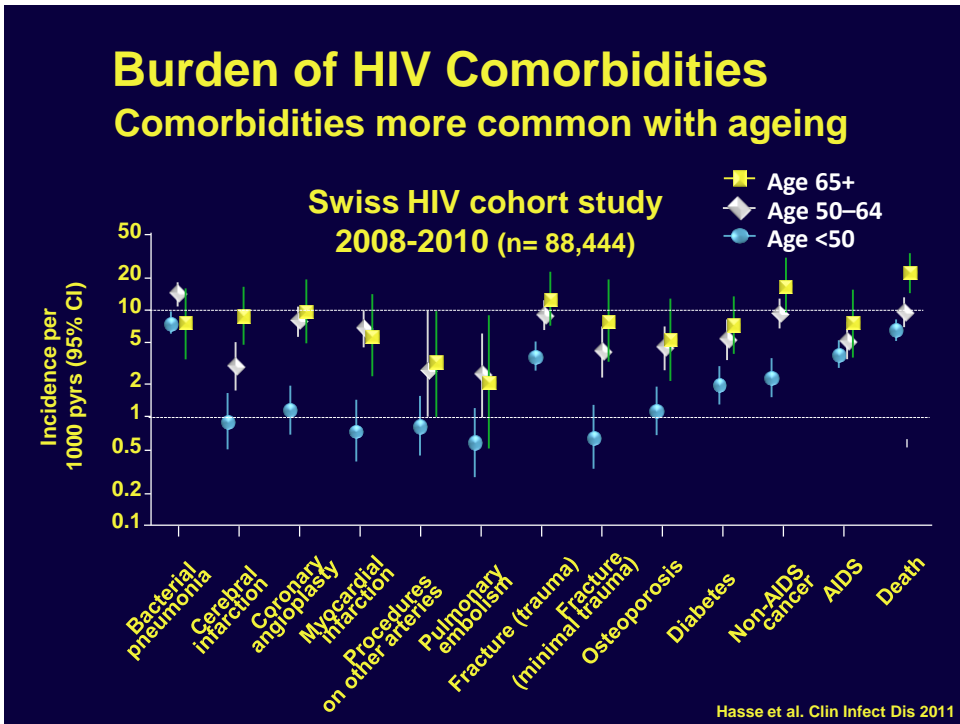
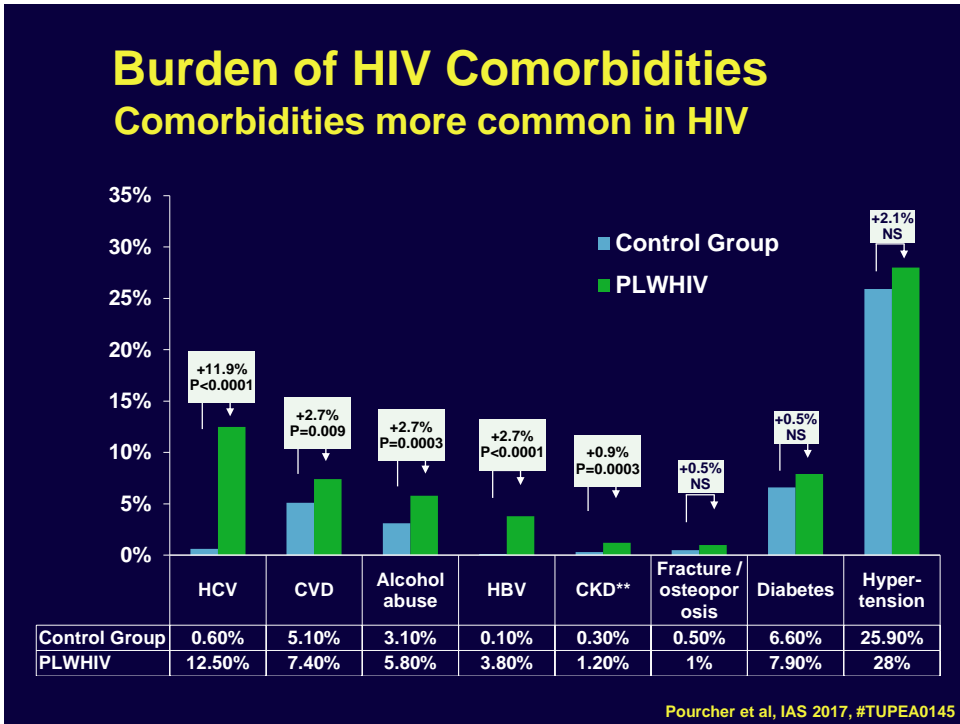
Burden of HIV Comorbidities

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HIV, Immunology and Infectious Diseases Unit,
St Vincent's Hospital, Sydney, Australia

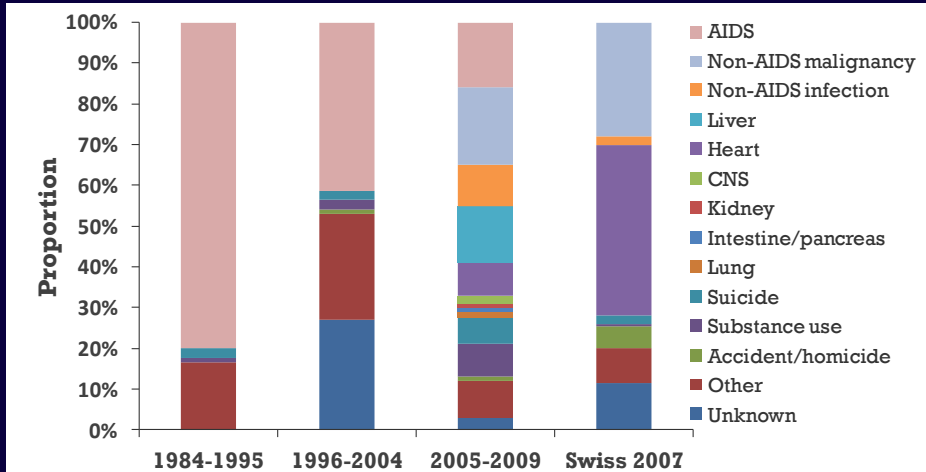
Burden of HIV Comorbidities End-organ toxicities





Burden of HIV Comorbidities

Comorbidity an increasing cause of death

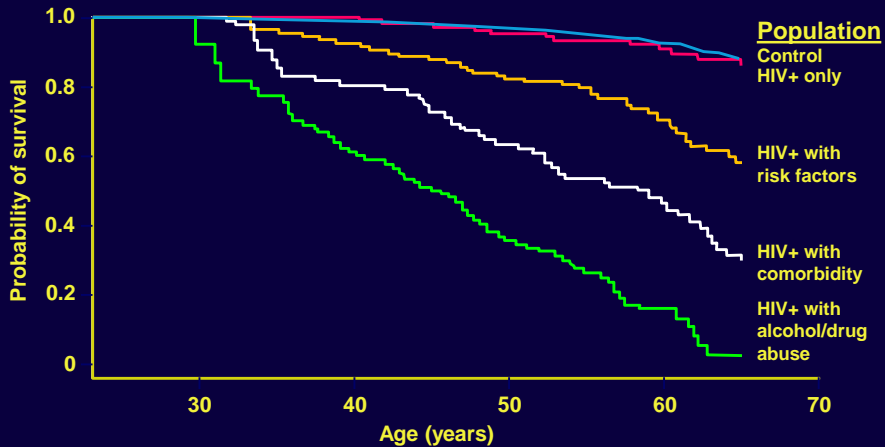


Ruppik et al. CROI 2011. Abstract 789

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Comorbidities reduce life expectancy

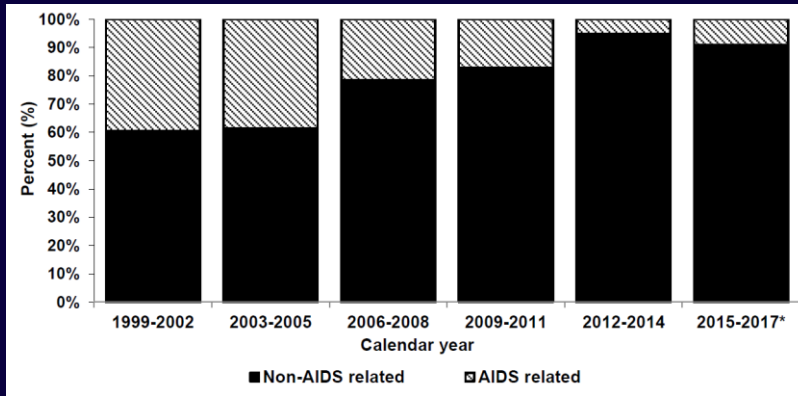
Survival for HIV+ adults starting HAART vs. the general population



Obel N et al. PLoS ONE 2011; 6(7): e22698

Burden of HIV Comorbidities

Comorbidities cause more deaths than AIDS



AHOD report 2017

Burden of HIV Comorbidities

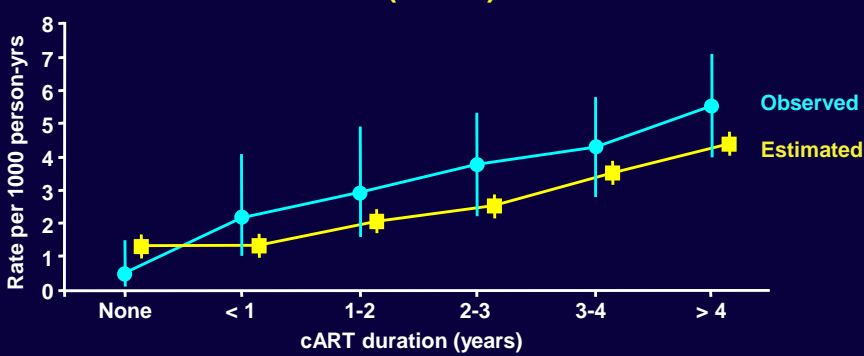
Impact of specific SNAEs: AHOD

Coding of Death Classification ²	Number
Cancer	28
AIDS (ongoing active disease)	6
MI or other ischemic heart disease	5
Other heart or vascular disease	4
Suicide	3
Chronic viral hepatitis (progression of / complication to)	3
Renal failure	1
Other Causes	9
Unknown (autopsy inconclusive, died overseas, etc)	19
Missing information ³	19

AHOD report 2017

Burden of HIV Comorbidities Cardiovascular disease

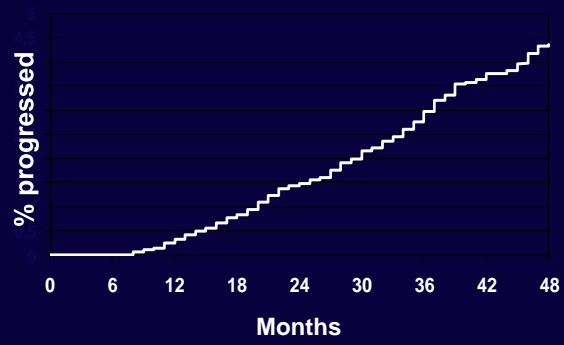
Observed and predicted MI rates by ART duration (D:A:D)



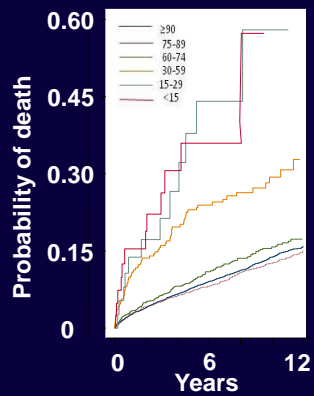
Law et al, HIV Med 2006

Burden of HIV Comorbidities Chronic kidney disease

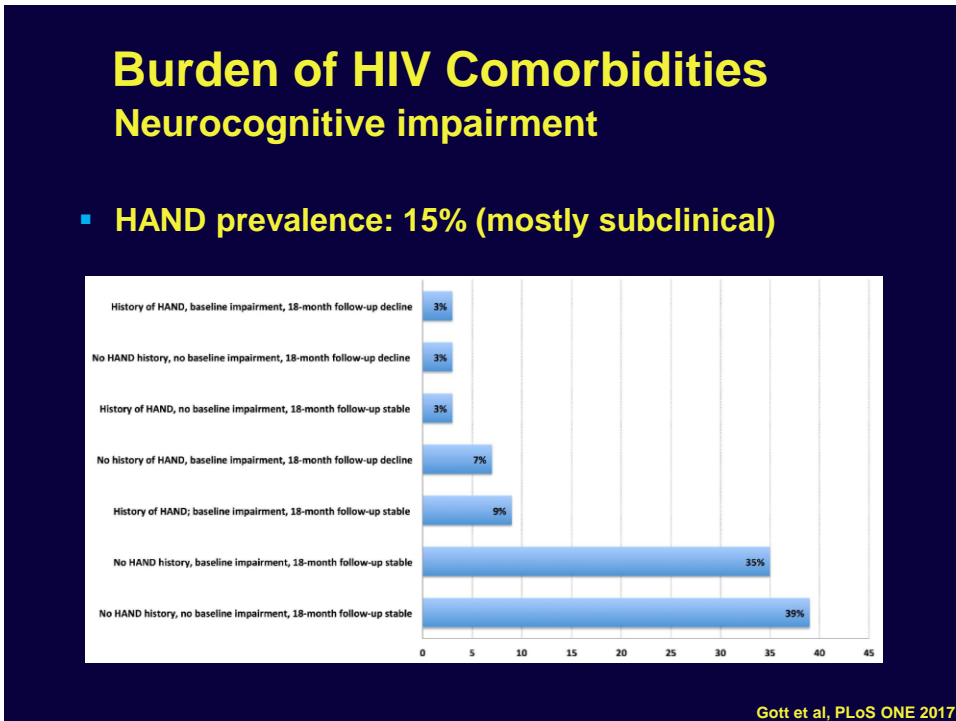
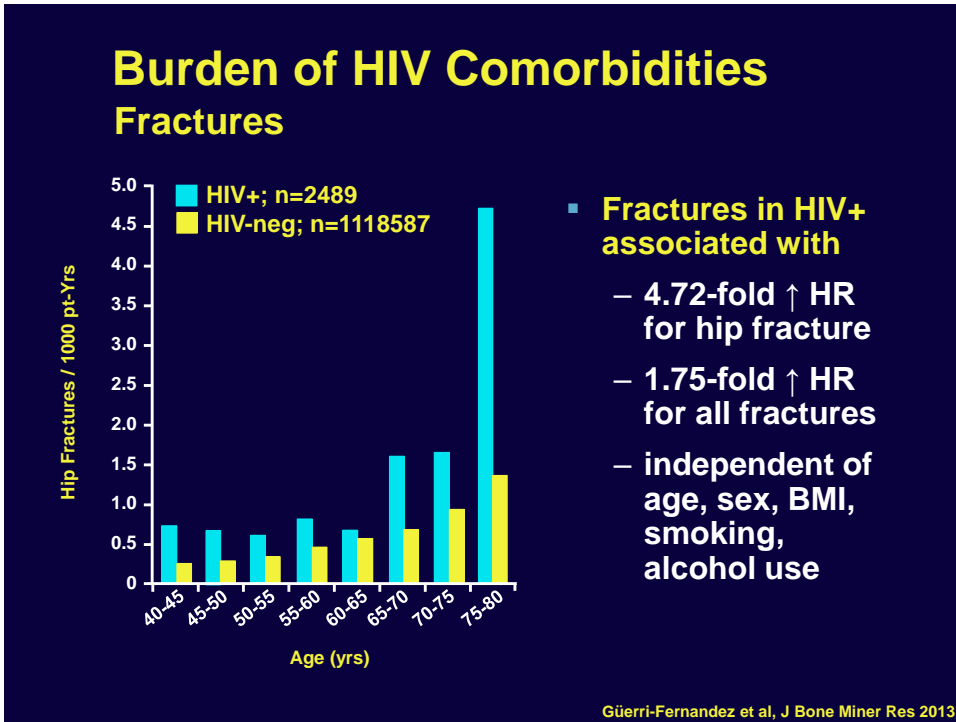
Incidence:
1.1 (0.9–1.2) / 100 PYFU



Risk of death

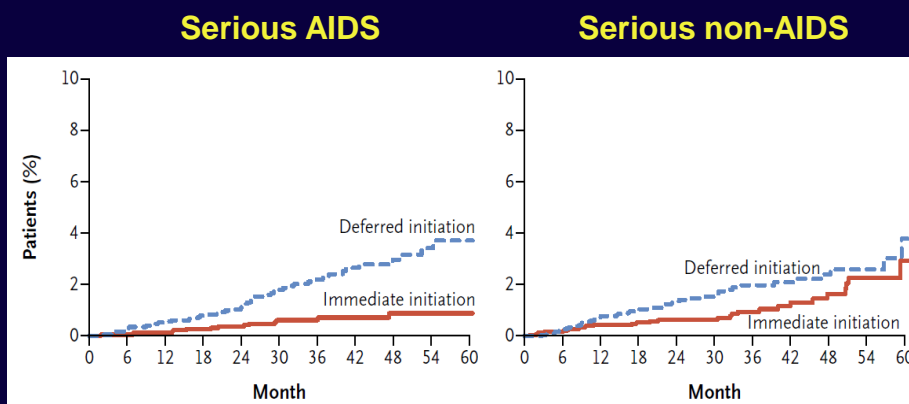


Kirk et al, CROI 2010; Wever et al, JAIDS 2010



Burden of HIV Comorbidities

Disease progression: AIDS vs. comorbidities (START)



START study group, N Engl J Med 2015

Burden of HIV Comorbidities

Incidence following initial ART (START)

Endpoint	Events	n/100 pt-yrs	Death
Death	12	0.17	12*
Serious AIDS	14	0.20	1
tuberculosis	6	0.09	0
lymphoma	3	0.04	0
Kaposi's sarcoma	1	0.01	0
Serious non-AIDS	28	0.42	4

START study group, N Engl J Med 2015

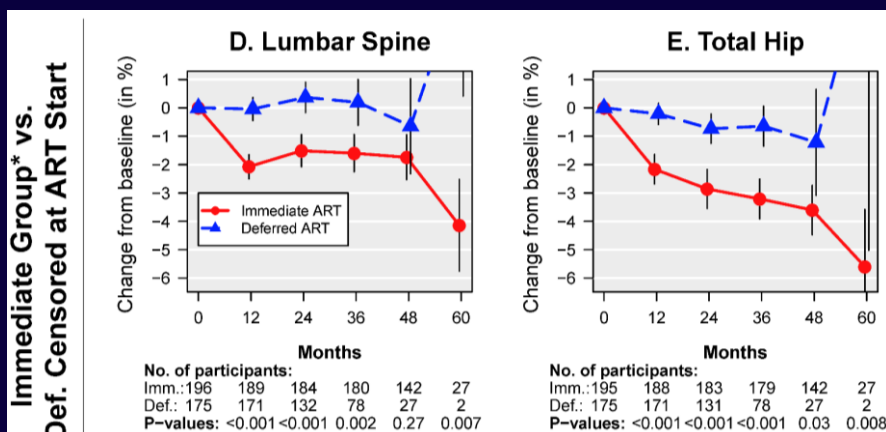
Burden of HIV Comorbidities Incidence following initial ART (START)

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lymphoma	3	0.04	0
Kaposi's sarcoma	1	0.01	0
Serious non-AIDS	28	0.42	4
CVD	12	0.17	3
cancer	9	0.13	1
renal failure	1	..	0
liver failure	0	0	0
Fracture	66	0.92	0

* Other deaths: accident / violence (n=4); unknown (n=3)

START study group, N Engl J Med 2015

Burden of HIV Comorbidities Incidence following initial ART (START)

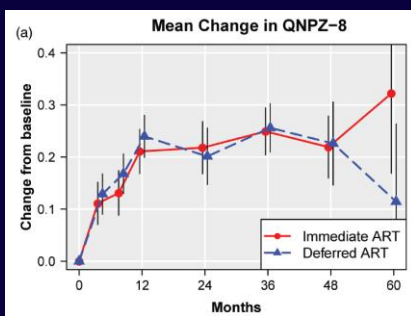


Fracture **66** **0.92** **0**

START study group, N Engl J Med 2015; Carr et al, CROI 2018

Burden of HIV Comorbidities Incidence following initial ART (START)

- Cognitive function not altered with ART, except worse with EFV



EFV in pre-specified ART	Yes	No	0.16	0.21	0.05	0.11	0.004
Yes	78.7	21.3	0.16	0.21	0.05	0.11	0.004
No	21.3	78.7	0.33	0.22	0.05	0.11	0.004

Wright et al, AIDS 2018 (in press)

Burden of HIV Comorbidities Complexity of care

	What	Interval
Organ		
CVD	ACC-AHA (including diabetes)	1-2 years
Renal	eGFR / U _{Prot:Cr} / other causes	6 months
Bone	DXA / FRAX / other causes	2-5 years
CNS	Cogstate?; LP / MRI if symptomatic	12 months
Cancer	Breast / bowel / lung / liver Pap smear	As in HIV- 1-2 years
Drug		
d4T / AZT	Lipoatrophy / fat accumulation	6 months
PI	GI symptoms	every visit
EFV	CNS symptoms	every visit
RAL	Muscle pain / weakness	every visit
DTG	CNS symptoms	every visit

Burden of HIV Comorbidities

Why comorbidities matter

- **Affect multiple organs**
- **More common, in part due to ART**
- **Increase risk of death**
- **More common cause of morbidity and mortality than AIDS in patients on ART**
- **Increase complexity of care**
 - more assessments
 - HIV disclosure / stigma
 - reduce ART adherence
 - reduce ART options
 - increase in polypharmacy
- **Research should focus mainly on cardiovascular disease and cancers**

Burden of HIV Comorbidities

Disclosures

- **Research funding/support: BMS, Gilead, Novartis and ViiV**
- **Conference travel sponsorships: BMS, Gilead and ViiV**
- **Advisory boards: Gilead, MSD and ViiV**