HIV and Ageing in UK
Impact on Rehabilitation

DR SIMON RACKSTRAW FRCP

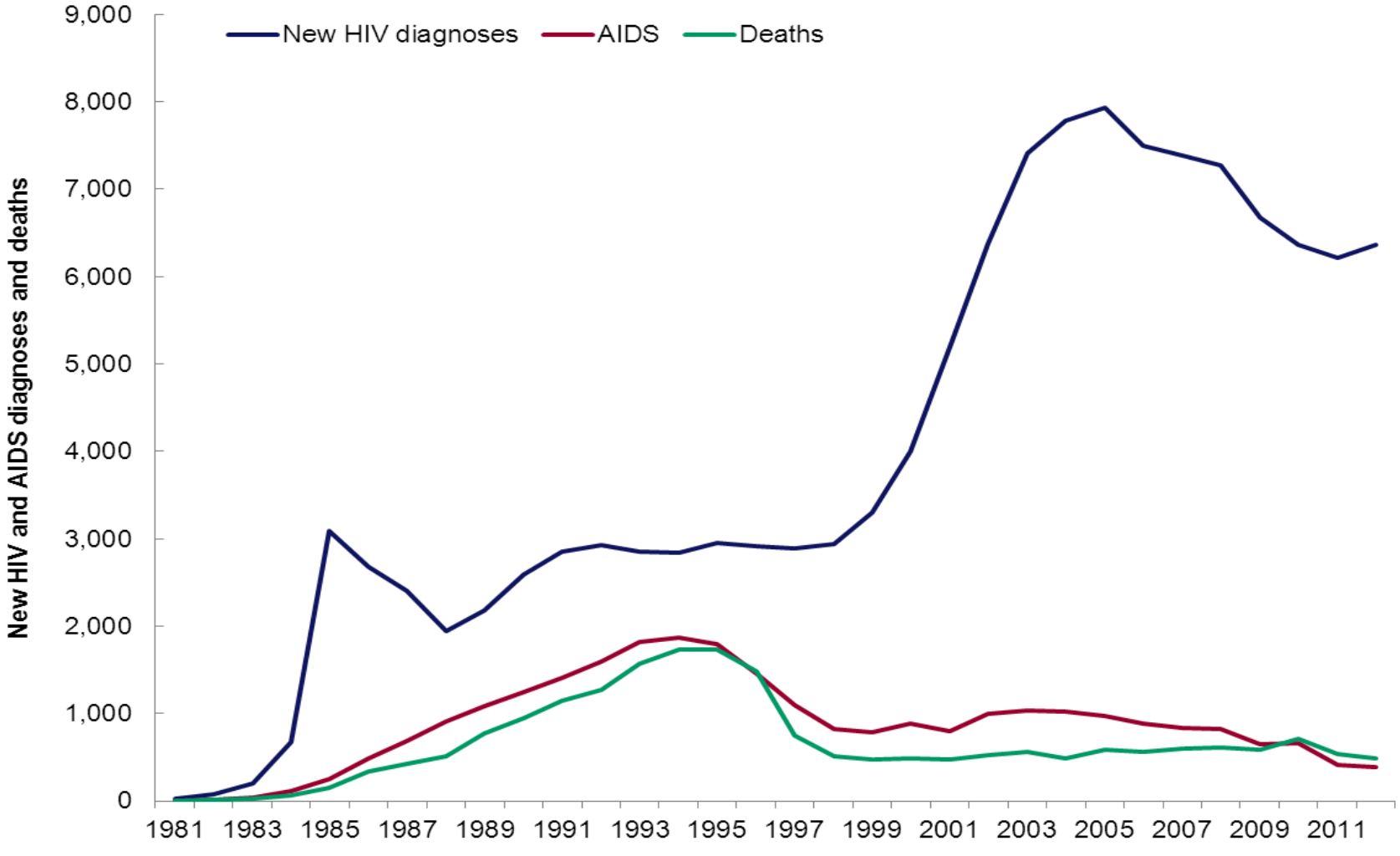
MEDICAL DIRECTOR, MILDMAY HOSPITAL UK

CONSULTANT HIV PHYSICIAN, BARTSHEALTH NHS TRUST

HIV and ageing demographics in the UK

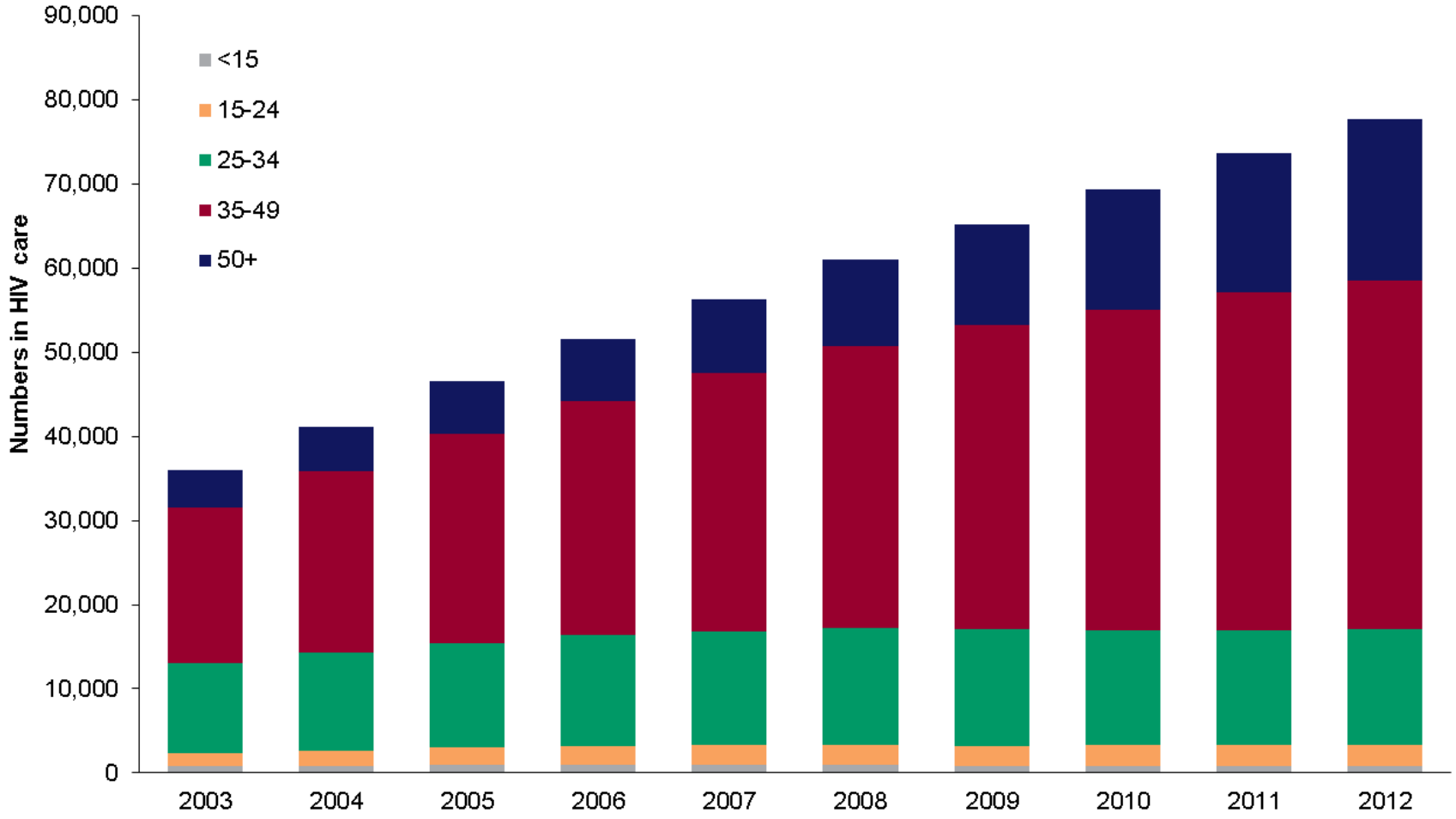
Public Health England

Annual new HIV and AIDS diagnoses and deaths: UK, 1981-2012



Public Health England

Trends in people diagnosed with HIV accessing care by age group: UK, 2003 – 2012



Older adults contracting HIV at older ages

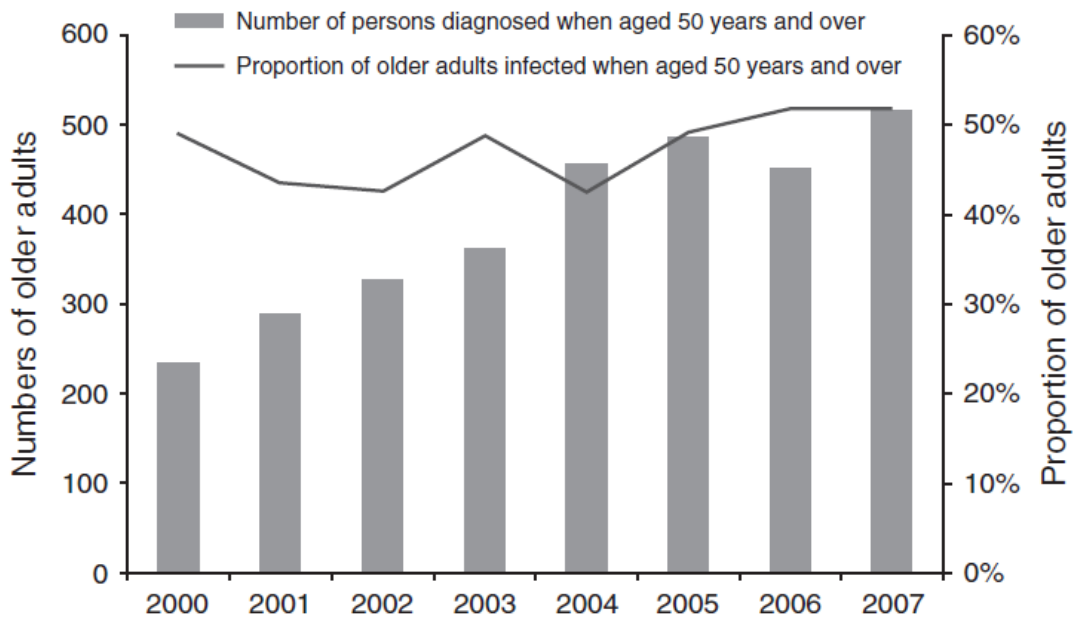
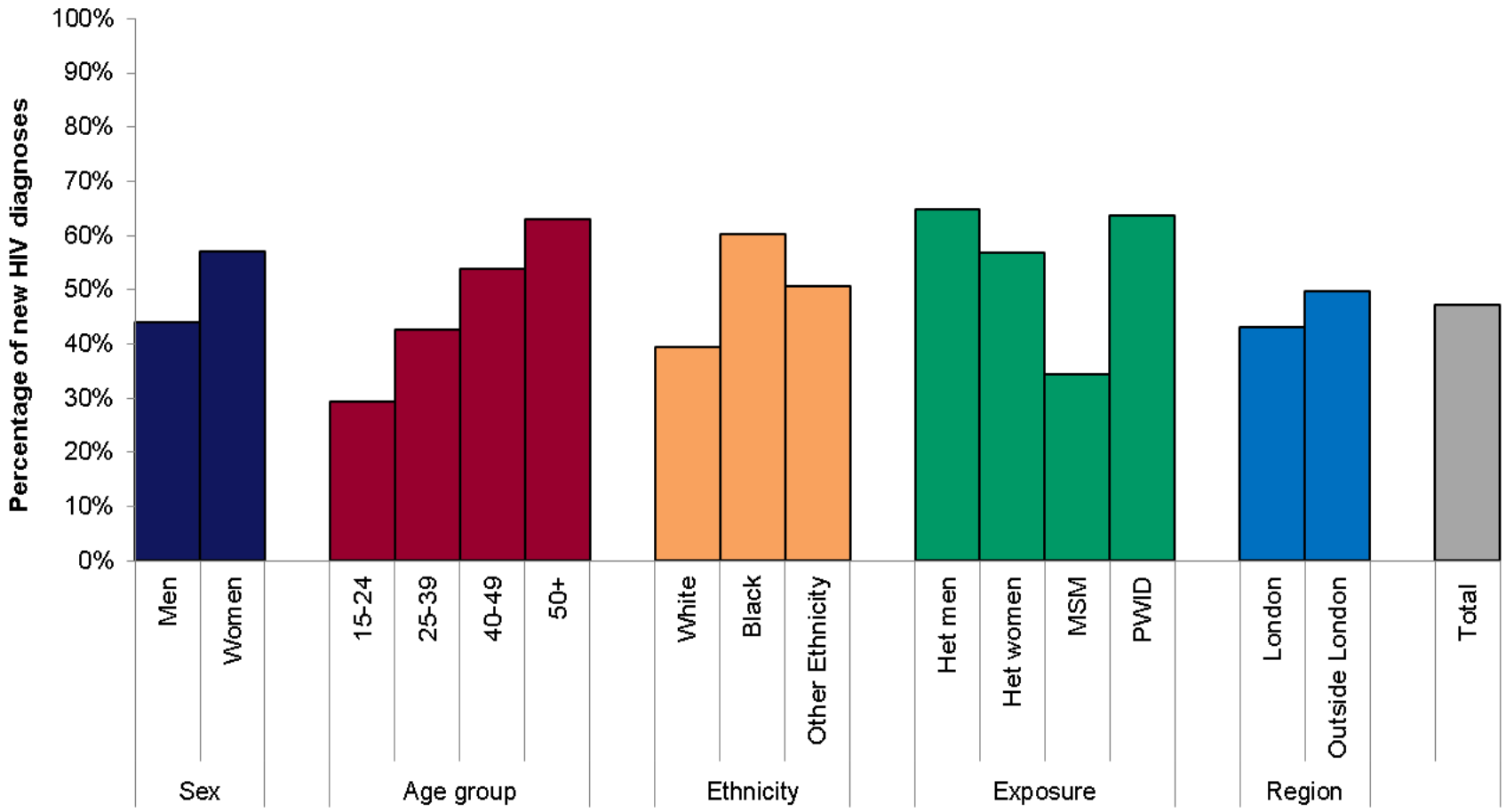


Fig. 2. New HIV diagnoses among adults aged 50 years and over and proportion estimated to have acquired their infection aged 50 years and over in England, Wales and Northern Ireland for 2000–2007.

Smith RD et al. HIV transmission and high rates of late diagnoses among adults aged 50 years and over. AIDS. 2010 Aug 24;24(13):2109-15.

Public Health England

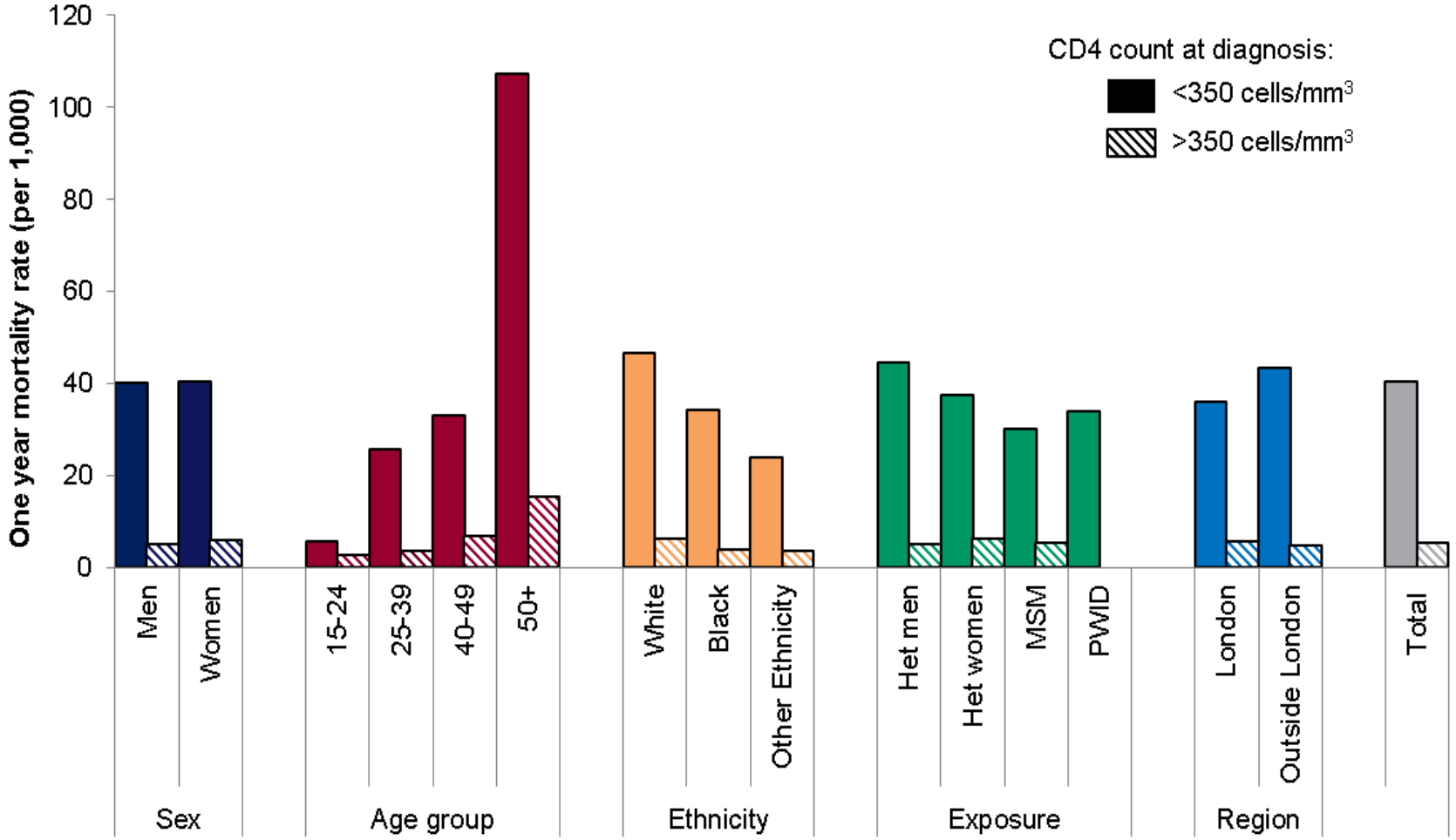
Attributes of late* HIV diagnosis, UK 2012



* CD4 <350 cells/mm^3 within three months of diagnosis

Public Health England

One year mortality among adults diagnosed by CD4 count at diagnosis: UK, 2010



HIV AND AGEING INTERPLAY

Age, HIV and the Immune System

Table 1. Age, HIV and the immune system

Immune pathophysiology	Ageing	HIV positive
CD4 lymphopenia	✓	✓
Inverted CD4:CD8 ratio	✓	✓
Reduced thymic output	✓	✓
Reduced naive cells	✓	✓
Shorter telomeres of CD8 cells	✓	✓

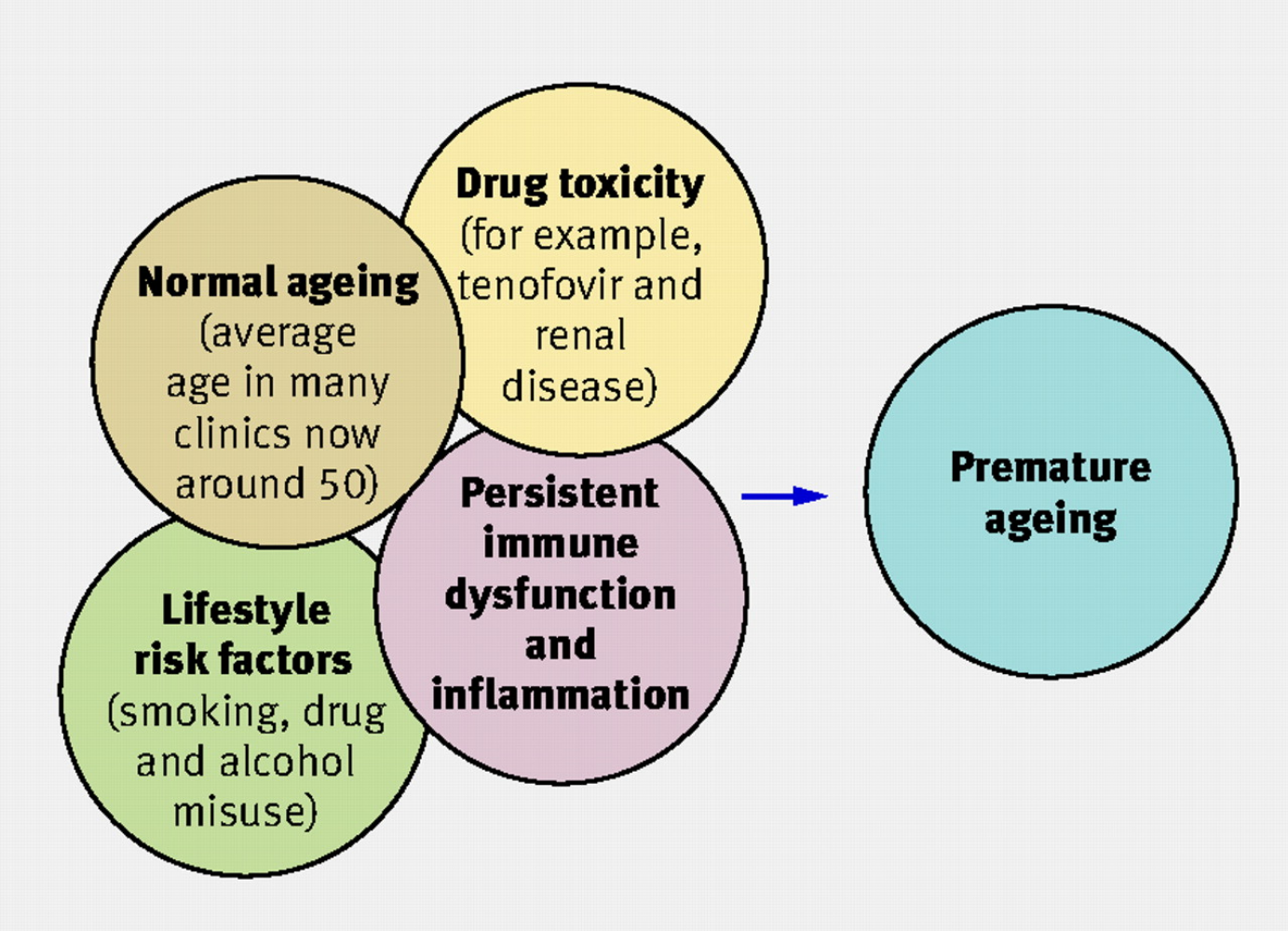
Bunting E et al. The human immunodeficiency virus and ageing. Age and Ageing, 2014; 43: 308-310

New comorbidities in the era of HAART

- Cardiovascular disease[1,2,3,4]
- Diabetes mellitus & insulin resistance[4]
- Cancer[5]
- Osteopenia & osteoporosis[6,7]
- Liver failure[8]
- Kidney failure[9]
- Cognitive decline & dementia[10]
- Frailty[11]

1. Klein et al. Do protease inhibitors increase the risk for coronary heart disease in patients with HIV-1 infection? J Acquir Immune Defic Syndr. 2002 Aug 15;30(5):471-7.
2. Hsue et al. Progression of atherosclerosis as assessed by carotid intima-media thickness in patients with HIV infection. Circulation. 2004 Apr 6;109(13):1603-8 .
3. Mary-Krause et al. Increased risk of myocardial infarction with duration of protease inhibitor therapy in HIV-infected men. AIDS. 2003 Nov 21;17(17):2479-86
4. Grinspoon et al. State of the science conference: Initiative to decrease cardiovascular risk and increase quality of care for patients living with HIV/AIDS: executive summary. Circulation. 2008 Jul 8;118(2):198-210 .
5. Patel et al. Incidence of types of cancer among HIV-infected persons compared with the general population in the United States, 1992-2003. Annals of Internal Medicine. 2008.10:728-736.
6. Triant et al. Fracture prevalence among human immunodeficiency virus (HIV)-infected versus non-HIV-infected patients in a large U.S. healthcare system. J Clin Endocrinol Metab. 2008 Sep;93(9):3499-504.
7. Arnsten et al. Decreased bone mineral density and increased fracture risk in aging men with or at risk for HIV infection. AIDS. 2007 Mar 12;21(5):617-23 .
8. Bica et al. Increasing mortality due to end-stage liver disease in patients with human immunodeficiency virus infection. Clin Infect Dis. 2001 Feb 1;32(3):492-7
9. Odden et al. Cystatin C level as a marker of kidney function in human immunodeficiency virus infection: the FRAM study. Arch Intern Med. 2007 Nov 12;167(20):2213-9.
10. McCutchan et al. HIV suppression by HAART preserves cognitive function in advanced, immune-reconstituted AIDS patients. AIDS. 2007 May 31;21(9):1109-17.
11. Desquilbet et al. HIV-1 infection is associated with an earlier occurrence of a phenotype related to frailty. J Gerontol A Biol Sci Med Sci. 2007 Nov;62(11):1279-86

Ageing and HIV



Deeks, S. G et al. BMJ 2009;338:a3172

Symptoms and comorbidities in older adults with HIV infection

Figure 5: Other major or long-term illnesses

	Diabetes	High blood pressure	Arthritis	Heart disease	Hepatitis B	Hepatitis C	Neurological condition	Cancer	Other	None	Total
Gay/Bisexual men	19	64	43	26	14	12	47	12	72	94	386
Black African women	3	19	9	3	1	1	1	0	6	7	34
White heterosexuals	5	13	10	2	0	5	7	0	14	8	44
Total (N=410)	27	96	62	31	15	18	55	12	92	109	344

Figures shown refer to numbers not percentages. Multiple responses were possible

Power L et al. A national study of ageing and HIV (50 plus) (2010) Joseph Rowntree Foundation

Ongoing care needs in the era of HAART

- “As people live longer with HAART, there is a rising number of HIV-positive people over 50 years old. They are more likely to have poorer psychological health related to a greater likelihood of comorbid conditions and economic hardship, and of being more severely affected by HIV-related stigma.”
- “There has been a shift from acute mental health problems associated with dying to chronic complex problems associated with living.”
- “The health of some HIV-positive people does not improve with HAART and some may die. Because of the optimism associated with HAART, failure to respond to the therapy may lead to a profound feeling of failure.”

G Green and R Smith. The psychosocial and health care needs of HIV-positive people in the United Kingdom following HAART: a review. HIV Medicine (2004), 5 (Suppl. 1),1–4

Psychosocial response

- Uncertainty: disability, not death?
- Double diagnoses
- Impact of stigma & discrimination
- Interaction of physical, psychological, and social

Bravo P et al. Tough decisions faced by people living with HIV: a literature review of psychosocial problems. AIDS Rev. 2010 Apr-Jun;12(2):76-88

Mildmay Hospital UK

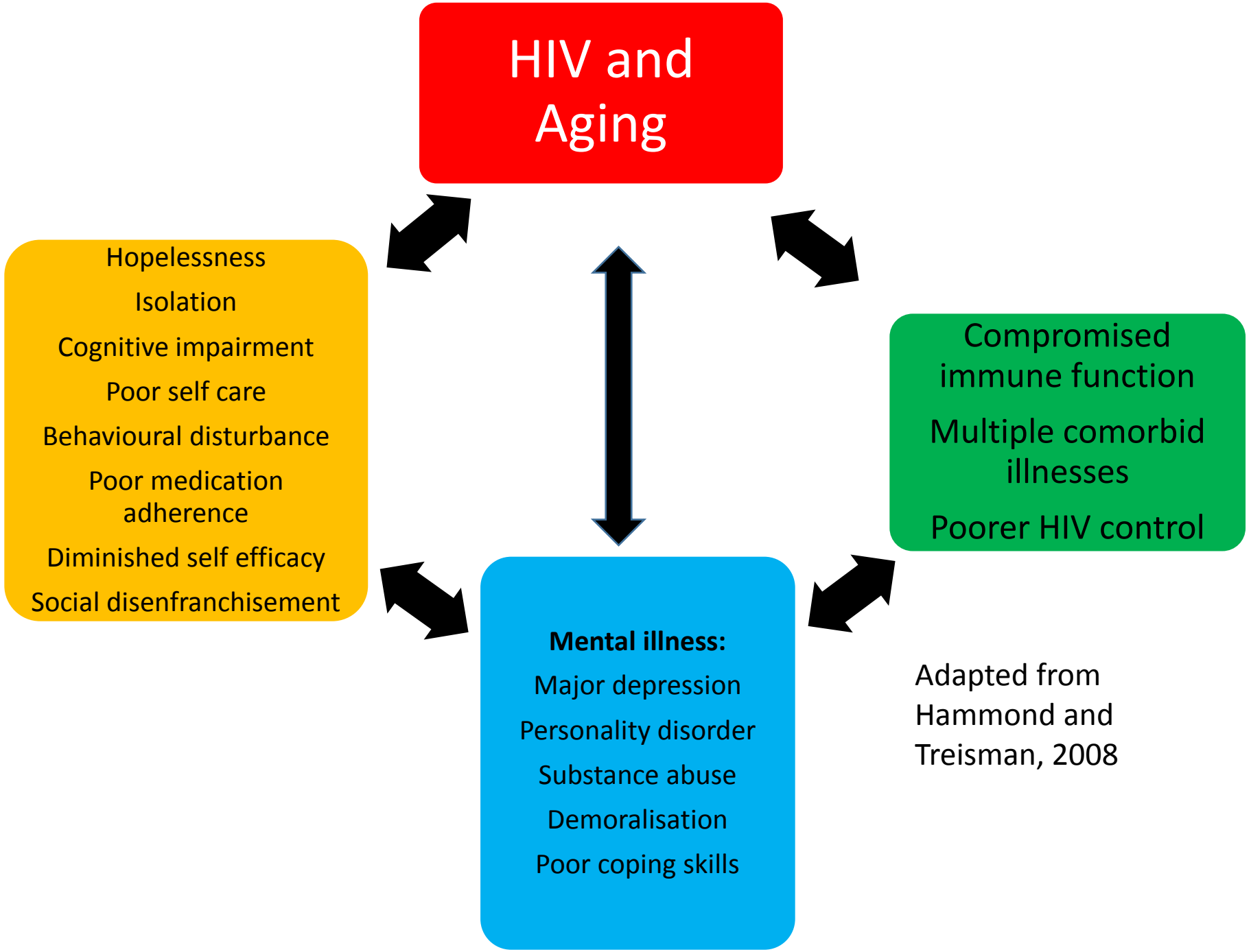
- 24 bedded inpatient assessment and rehabilitation unit for HIV+ adults accepting referrals and admissions from across London and nationally

Mildmay Mission hospital admission trends

- Increasing age of patients
- Increasing neurological disability
- Increasing amount of comorbidities
- Increasing numbers of patients loss to follow
- New neurological syndromes i.e CD8 lymphocytosis, CSF escape

Ageing cohort at the Mildmay

- In year 2005/2006 21% of admissions to Mildmay were 50 years or older
- In the most recent year 2013/2014 37.3% of admissions to Mildmay were 50 years or older
- Current distribution of ages gives a median age of admission of 47



Adapted from Hammond and Treisman, 2008

Case study

- Mr RB
- 73 yr old Caucasian man
- Admitted to Mildmay for rehabilitation following acute hospital admission when he had presented with self neglect, chronic cough, poor adherence with care and medications.

Diagnoses

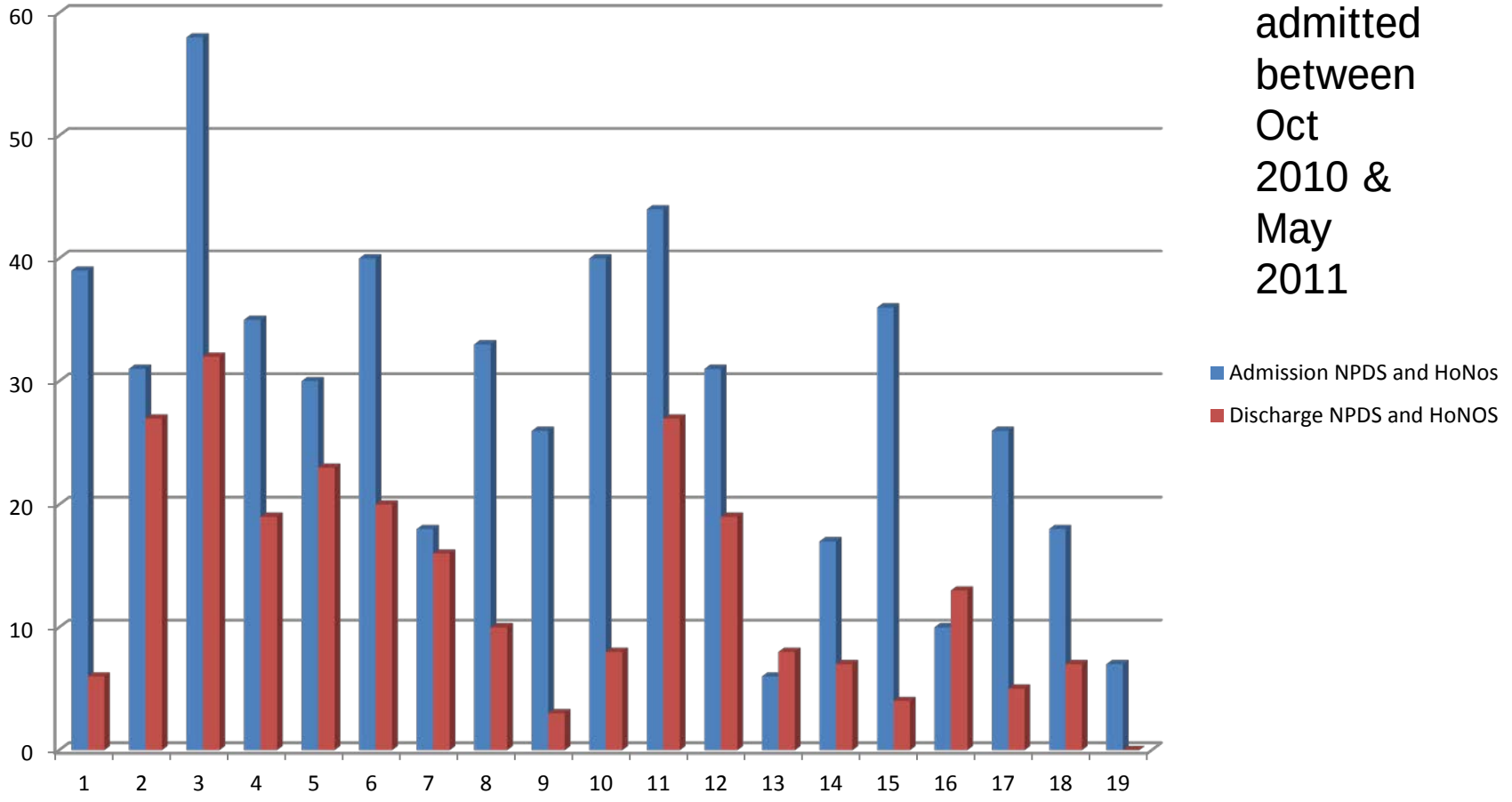
- PML
- Cerebral Small vessel disease
- Previous Alcohol excess
- Cerebral atrophy
- Traumatic brain injury
- Significant cognitive impairment
- Past splenectomy
- Hypercholesteramia
- Previous MI
- COPD with emphysema
- Asbestosis with pleural plagues

Function

- **On admission**
- Bedbound
- Malnourished and cachectic
- Disorientated in time, place and person
- Needing help for all levels of basic personal care
- CD4 53, VL 177804

- **On discharge**
- Mobile independently to 150m
- Eating and drinking normally
- Orientated in time, place and person
- Able to perform many aspects of basic personal care
- CD4 440, VL <40

Measuring rehabilitation outcomes - Comparison of Admission and Discharge scores (NPDS & HoNOS-ABI combined)



19 patients admitted between Oct 2010 & May 2011

Rackstraw et al. A preliminary investigation of the use of a 'basket' of outcome measures within a rehabilitation service for adults diagnosed with HIV-related neurological disorders. Abstract 5.8, 10th AIDS Impact Conference, Santa Fe, USA; September , 2011

Challenges with ageing and HIV in rehabilitation

- Complexity of intersecting co morbidities
- Poor physiological reserve
- It takes longer
- Interweaving of principles of geriatrics, palliative care, general medicine and HIV medicine
- Even greater uncertainty over prognosis