Chronic diseases in HIV

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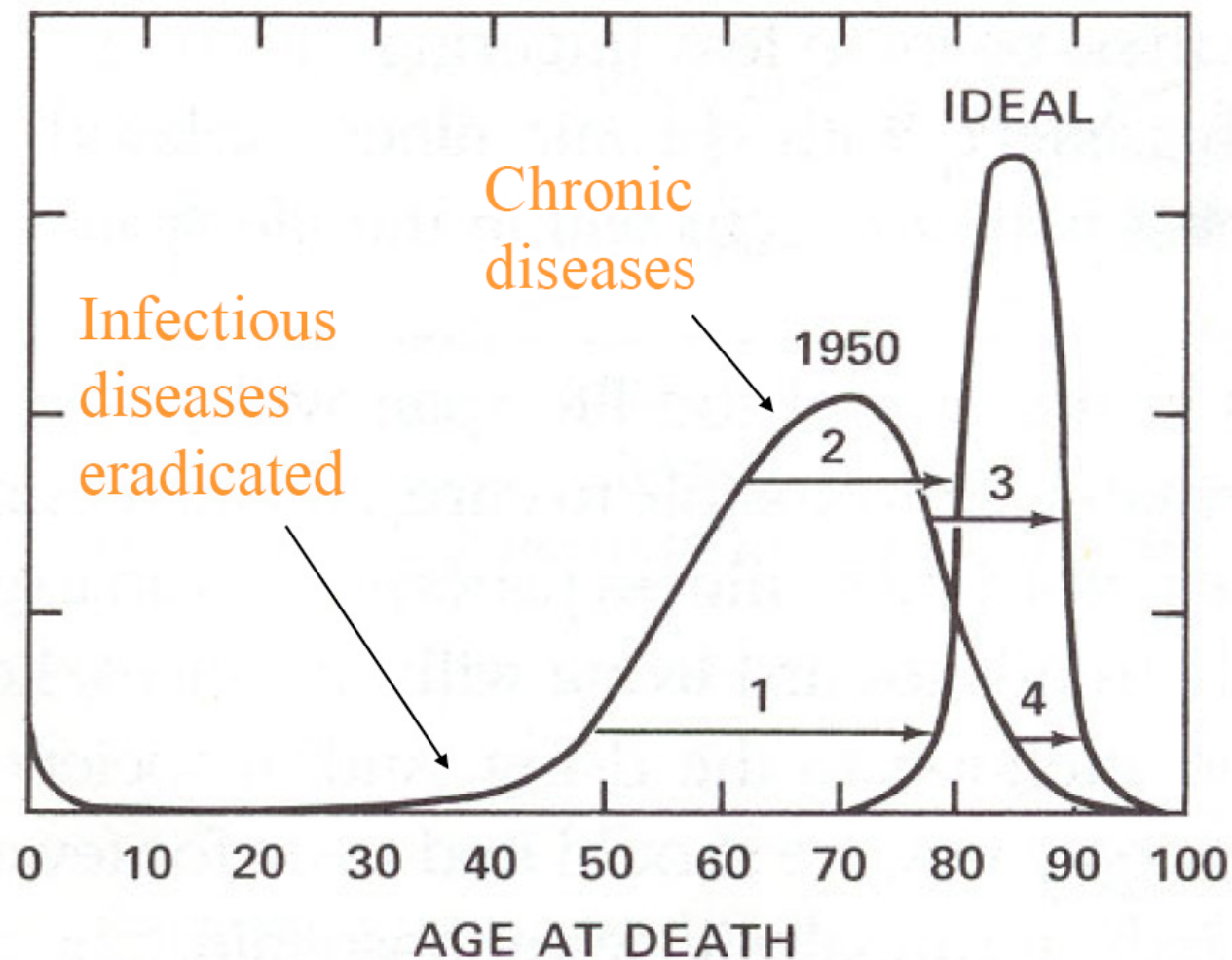# Which are the common chronic diseases in South Africa?

Chronic illness...

- SA mortality data
- AIDS kills 50% (TB, pneumonia, gastro - #1-3)
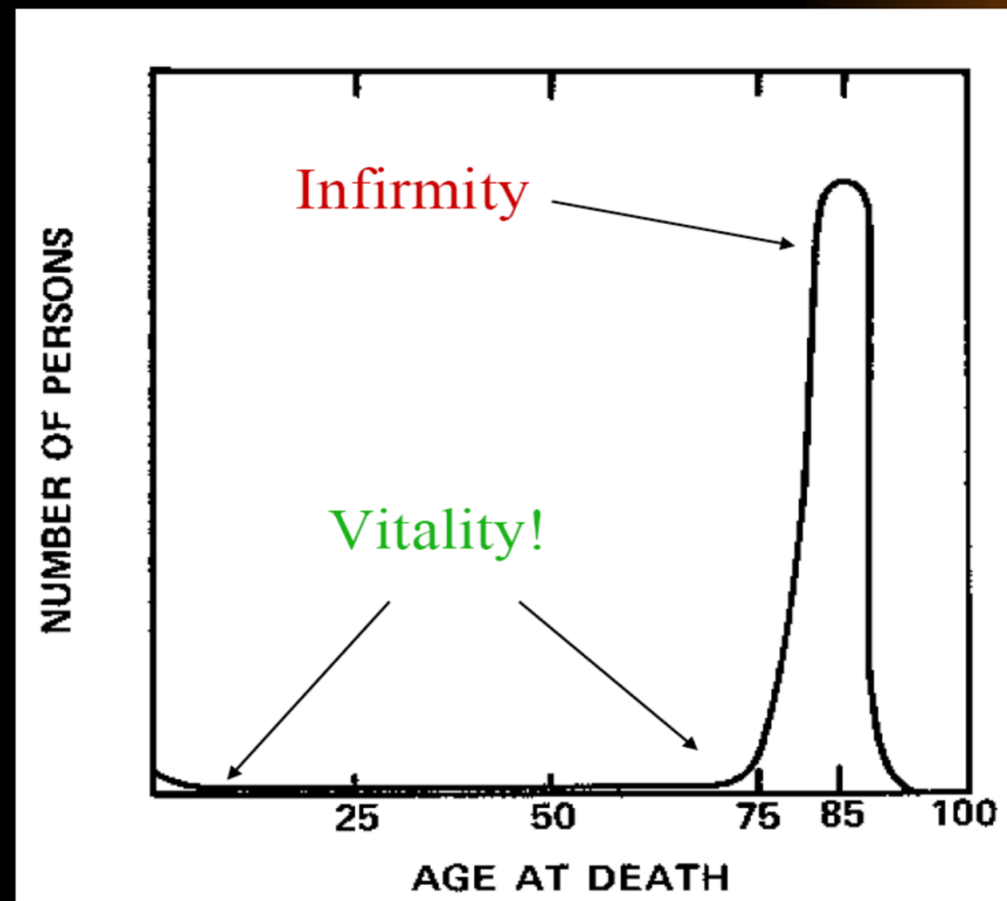- #4: Hypertension
- #6: Diabetes

Why would life expectancy be higher in HIV?

Changing Life-Expectancy
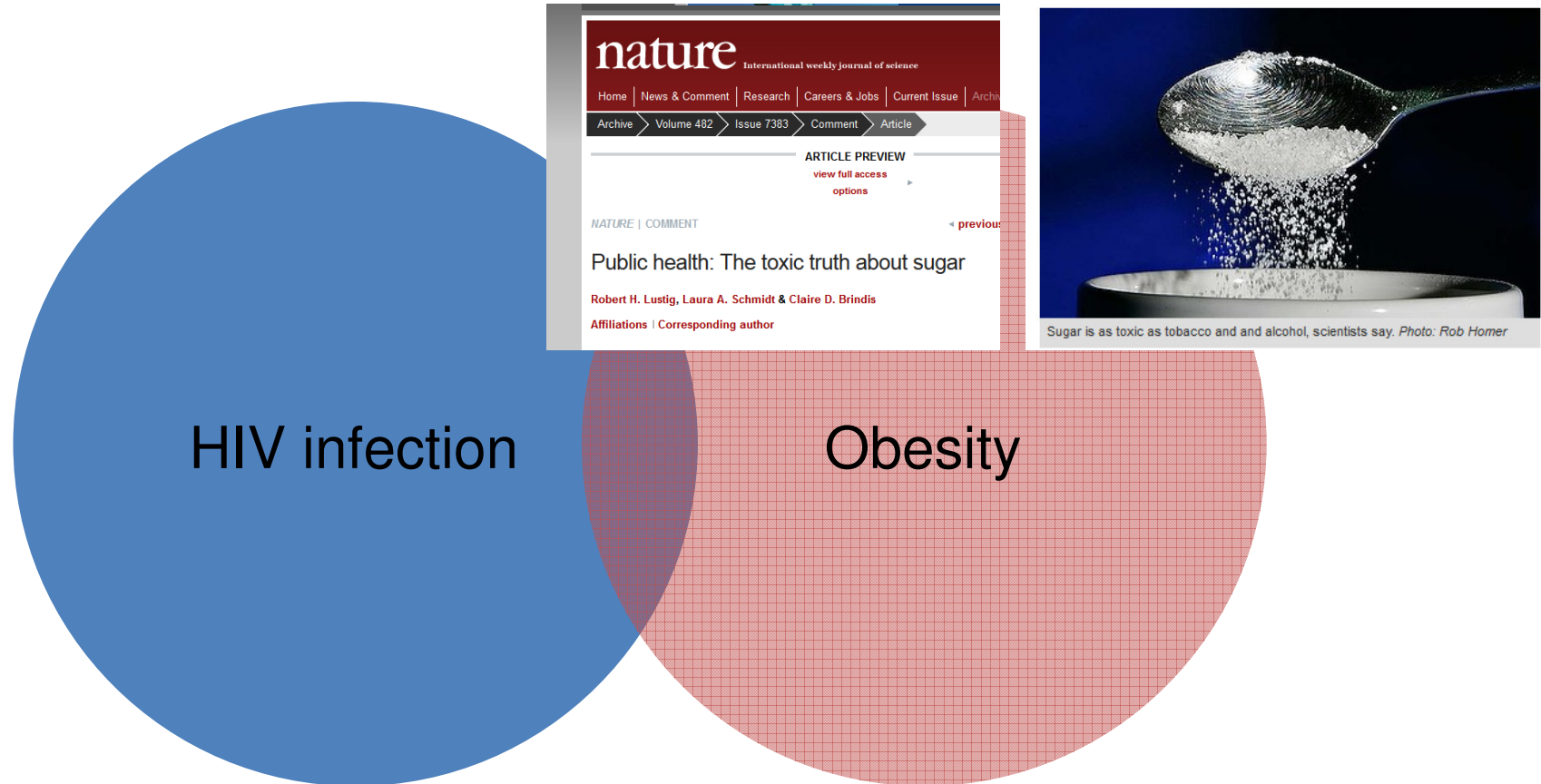
The Perfect Life: Vitality & Brief Infirmity
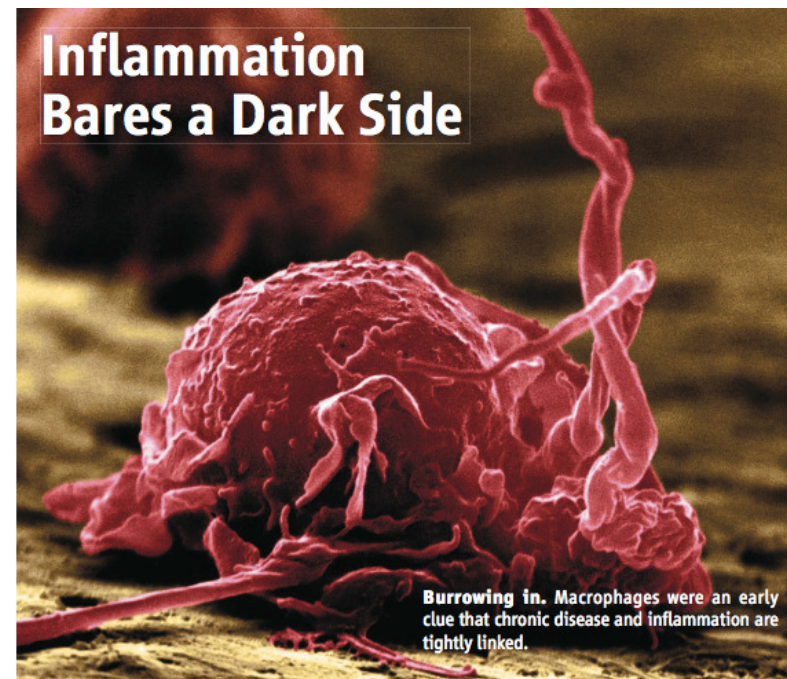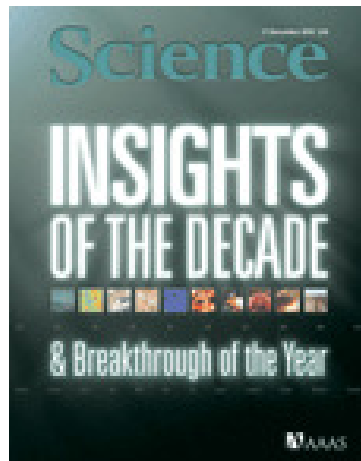
Why are South Africans so fat?

BMJ 1990

- "Type 2 DM will be the commonest cause of death in South Africa"
- Lancet 2013: same?

2 Overlapping Epidemics

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Public health: The toxic truth about sugar

Robert H. Lustig, Laura A. Schmidt & Claire D. Brindis

Affiliations | Corresponding author

Sugar is as toxic as tobacco and and alcohol, scientists say. *Photo: Rob Homer*

HIV infection   Obesity

Inflammation
Bares a Dark Side

Burrowing in. Macrophages were an early clue that chronic disease and inflammation are tightly linked.

Traditional risk factors (age, gender, DM, HTN) are major predictors for MI (D:A:D)

	Adjusted Model 1		Adjusted Model 2	
	Relative Rate (95% CI)	P Value	Relative Rate (95% CI)	P Value
Exposure to PIs (per year)	1.16 (1.10-1.23)	<0.001	1.10 (1.04-1.18)	0.002
Age (per 5 yr)	1.39 (1.31-1.46)	<0.001	1.32 (1.23-1.41)	<0.001
Male sex	1.91 (1.28-2.86)	0.002	2.13 (1.29-3.52)	0.003
BMI >30 kg/m^2	1.70 (1.08-2.69)	0.02	1.34 (0.77-2.34)	0.31
Family history of CHD	1.56 (1.10-2.23)	0.01	1.40 (0.96-2.05)	0.08
Smoking status				
Current	2.83 (2.04-3.93)	<0.001	2.92 (2.04-4.18)	<0.001
Former	1.65 (1.12-2.42)	0.01	1.63 (1.07-2.48)	0.02
Previous cardiovascular event	4.30 (3.06-6.03)	<0.001	4.64 (3.22-6.69)	<0.001
Diabetes mellitus	-	-	1.86 (1.31-2.65)	<0.001
Hypertension	-	-	1.30 (0.99-1.72)	0.06
Total cholesterol (per mmol/liter increase)	-	-	1.26 (1.19-1.35)	<0.001
HDL cholesterol (per mmol/liter increase)	-	-	0.72 (0.52-0.99)	0.05

Fatter may be better…

MAJOR ARTICLE `HIV/AIDS`

An Optimal Body Mass Index Range Associated With Improved Immune Reconstitution Among HIV-Infected Adults Initiating Antiretroviral Therapy

John R. Koethe,[1] Cathy A. Jenkins,[2] Bryan E. Shepherd,[2] Samuel E. Stinnette,[1] and Timothy R. Sterling[1,3]

[1]Department of Medicine, Division of Infectious Diseases and Departments of, [2]Biostatistics and [3]Medicine, Center for Health Services Research,

Conclusions. 12-month immune reconstitution on ART was highest among patients commonly classified as overweight, suggesting there may be an optimal BMI range for immune recovery on ART.
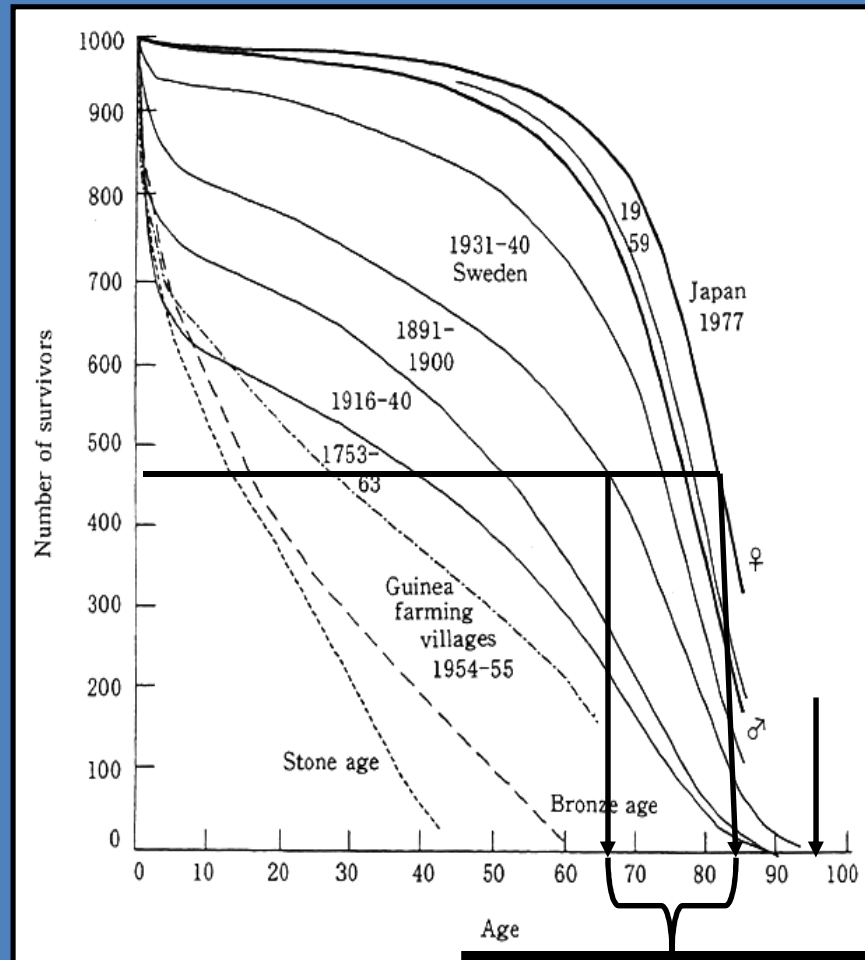
The 11 Keys to Healthy Aging in HIV

1. Viral suppression after early diagnosis

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

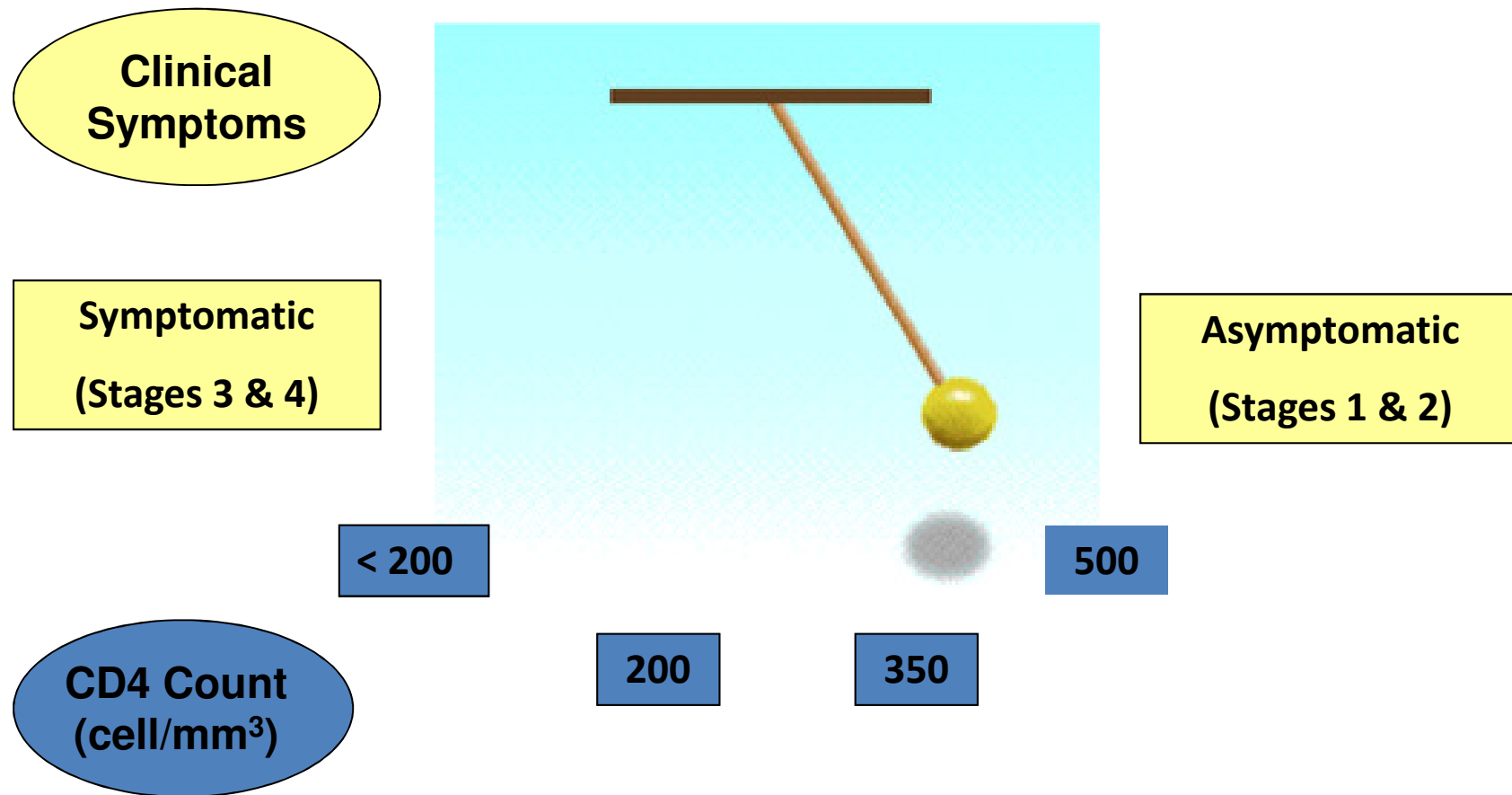# What can you tell your patients BEFORE starting ART?

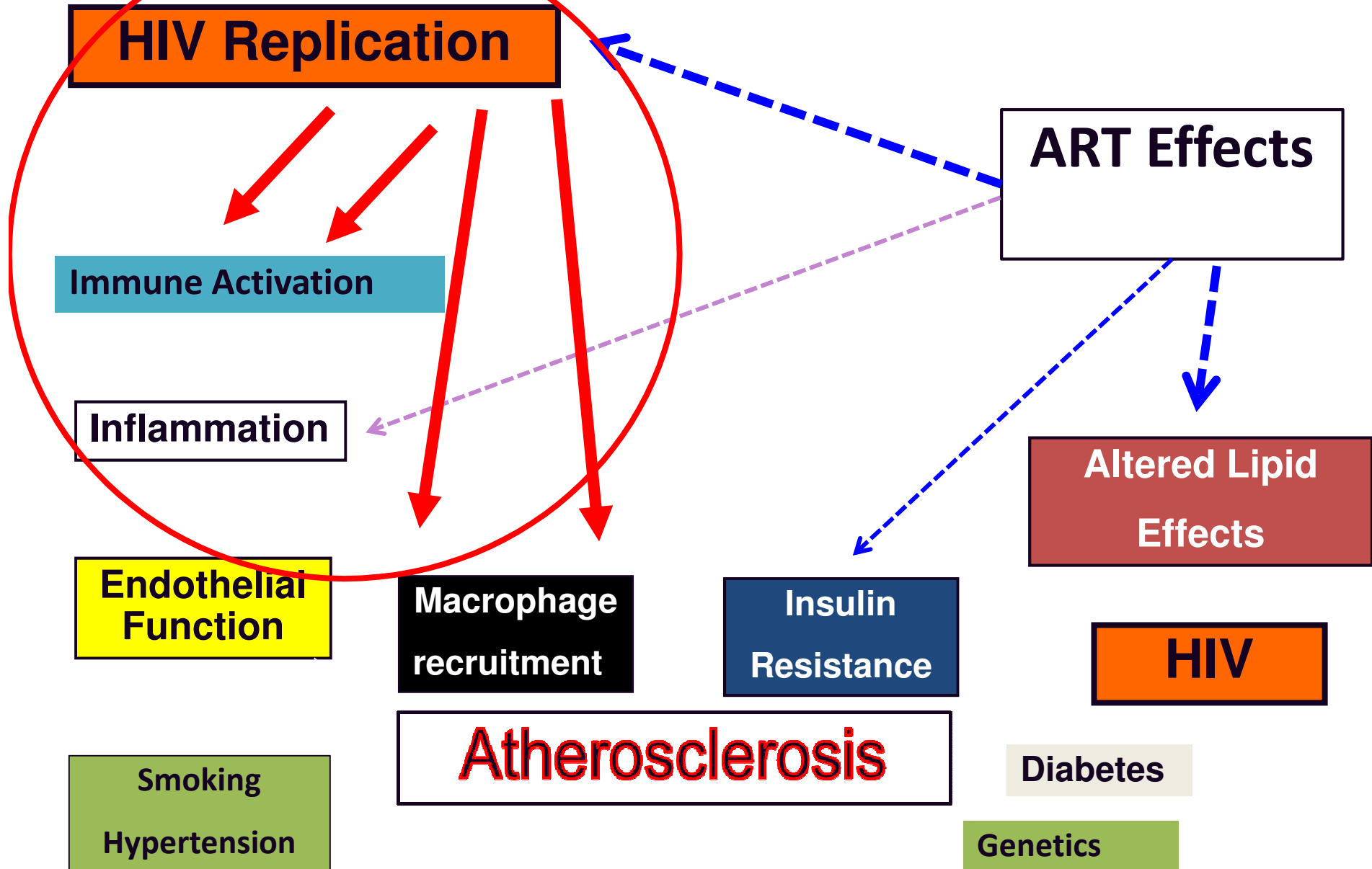# Population survival curves

- Increase in average life expectancy but not life span
- Disease vs. aging effects

Life span

Therapy for Early HIV Infection

Effects of HIV, Host and ART (Currier, WHEAX0102)

HIV Replication

Immune Activation

Inflammation

Endothelial Function

Macrophage recruitment

Insulin Resistance

Atherosclerosis

ART Effects

Altered Lipid Effects

HIV

Smoking Hypertension

Diabetes

Genetics

Vision... chronic care
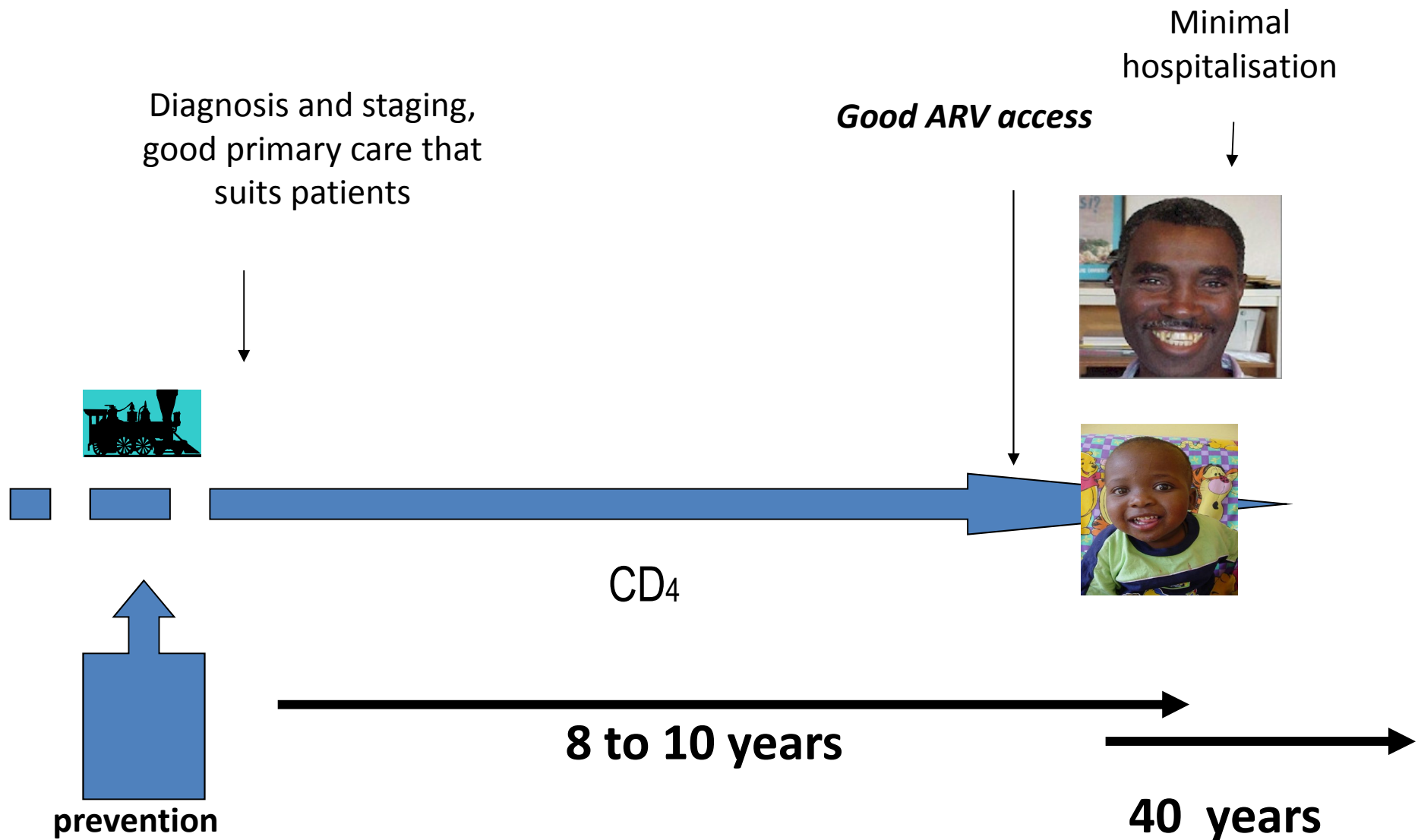
The Health System Appears to Be Weak Across a Multitude of Dimensions
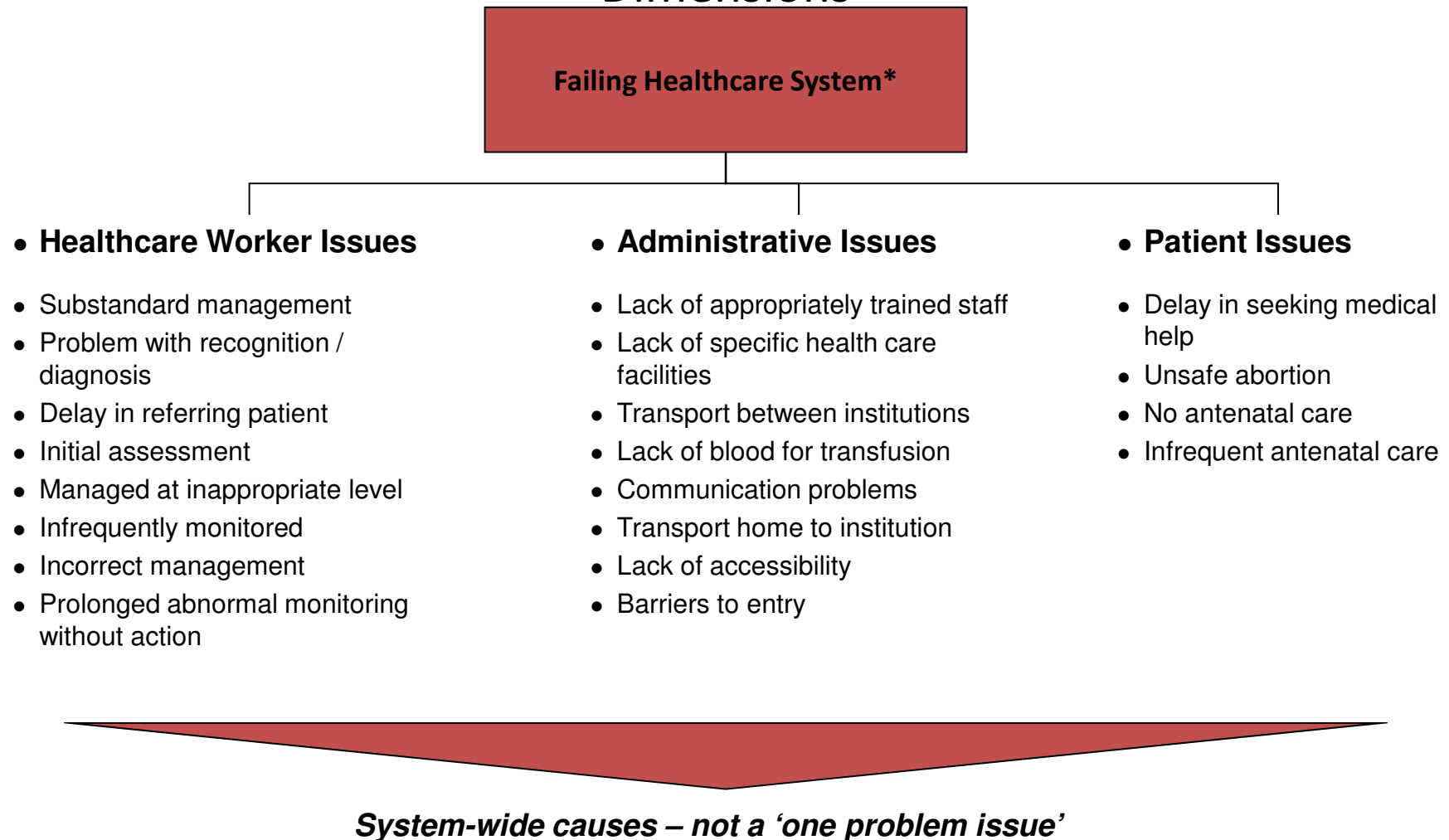
Failing Healthcare System*

Healthcare Worker Issues

- Substandard management
- Problem with recognition / diagnosis
- Delay in referring patient
- Initial assessment
- Managed at inappropriate level
- Infrequently monitored
- Incorrect management
- Prolonged abnormal monitoring without action

Administrative Issues

- Lack of appropriately trained staff
- Lack of specific health care facilities
- Transport between institutions
- Lack of blood for transfusion
- Communication problems
- Transport home to institution
- Lack of accessibility
- Barriers to entry

Patient Issues

- Delay in seeking medical help
- Unsafe abortion
- No antenatal care
- Infrequent antenatal care

System-wide causes – not a 'one problem issue'

Treatment as prevention

- Can reducing the viral load earlier have a public health impact?

- Convenient convergence!

The 10 Keys to Healthy Aging

1. Control blood pressure
2. Regulate blood glucose
3. Lipids
4. Stop smoking
5. Be active
6. Participate in cancer screenings
7. Get regular immunizations
8. Prevent bone loss and muscle weakness
9. Combat depression
10. Maintain social contact