

The History of HIV

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Conflicts of interest: None



MMWR

Weekly

June 5, 1981 / 30(21);1-3

Epidemiologic Notes and Reports

Pneumocystis Pneumonia --- Los Angeles

In the period October 1980-May 1981, 5 young men, all active homosexuals, were treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different hospitals in Los Angeles, California. Two of the patients died. All 5 patients had laboratory-confirmed previous or current cytomegalovirus (CMV) infection and candidal mucosal infection. Case reports of these patients follow.

Patient 1: A previous
associated with eleva
* The patient's condi
and postmortem exa

2-month history of fever
as 256; in may 1981 it was 32.
and acyclovir. He died May 3,

CDC: MMWR June 5, 1981

9 MSM with PCP

CDC: MMWR July 3, 1981

MSM with PCP or KS

The Science-
Director of NIAID made this a new
almost singular priority

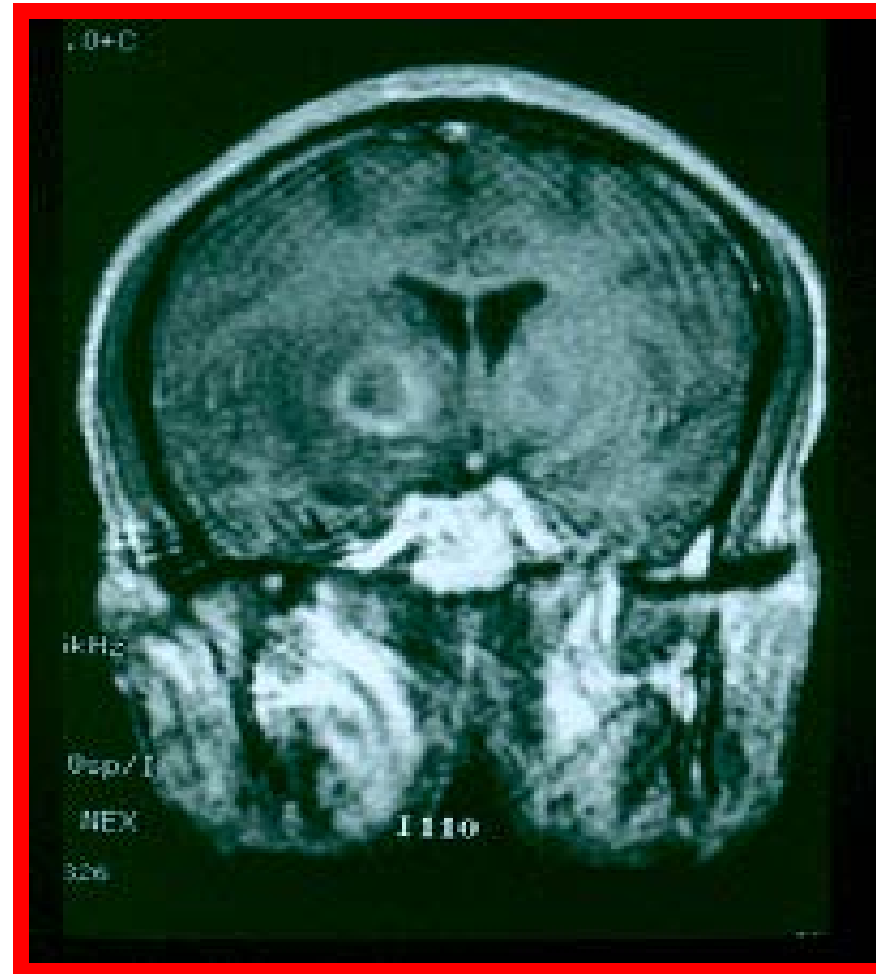


"Goose pimples" 1981

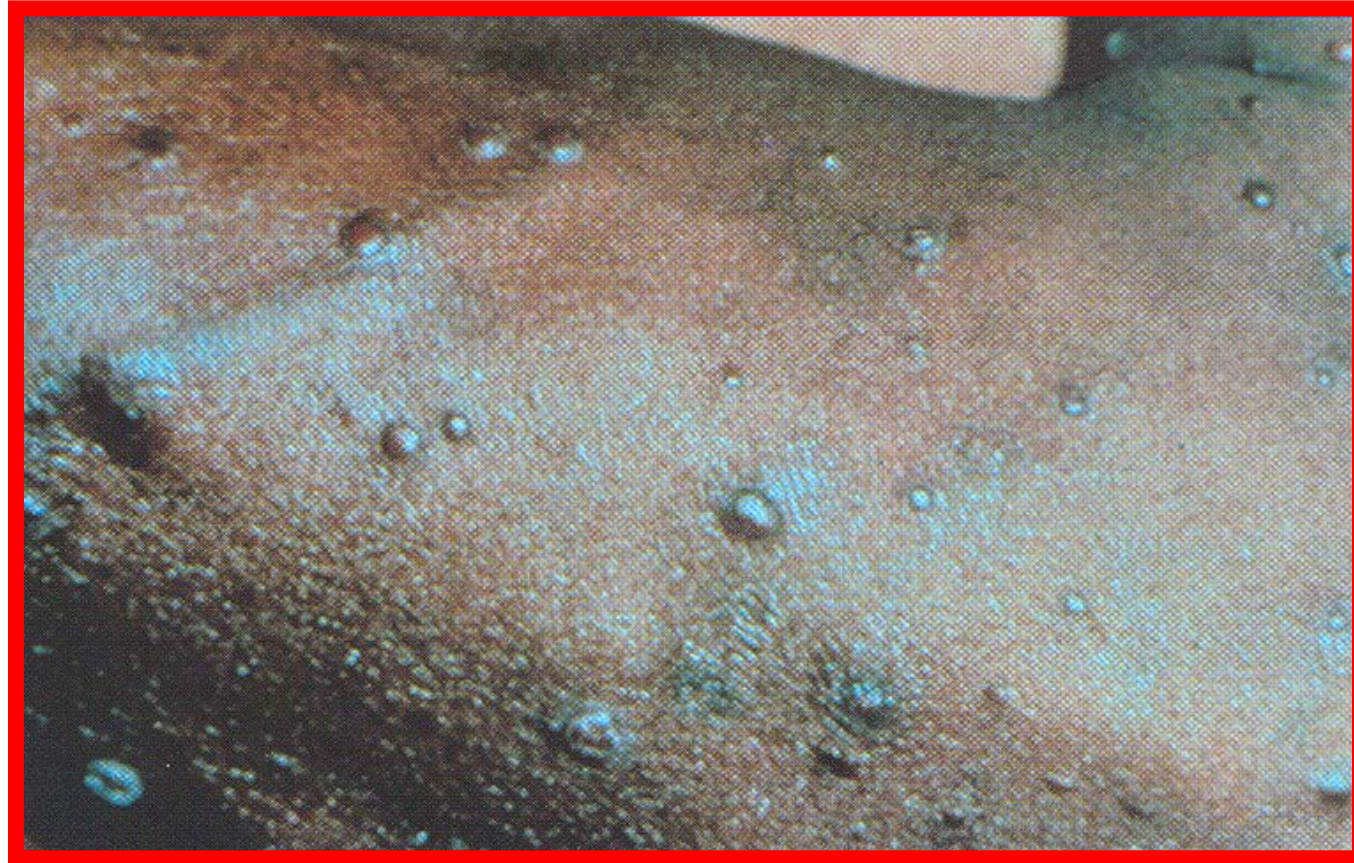
PNEUMOCYSTIS PNEUMONIA



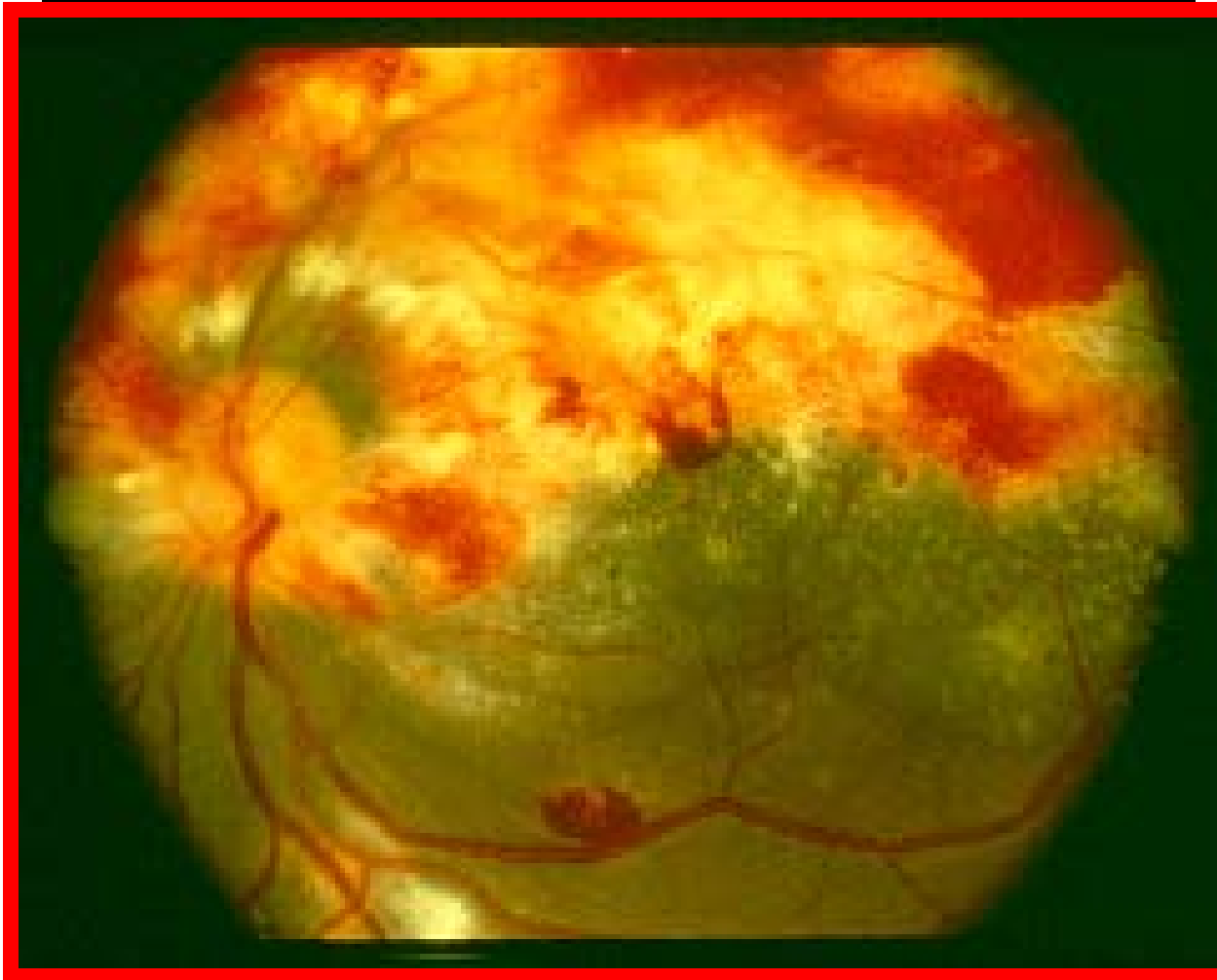
TOXOPLASMOSIS



KAPOSI SARCOMA



CMV RETINITIS



WHO WINNING PHOTO AWARD: AIDS – THE HUMAN TRAGEDY



The stigma- Ryan White



Child with hemophilia - HIV discovered 12/17/84 - banned from school and given 6 months to live. Died 5 years later, 4 months before passage of the Ryan White Care Act

Government leadership C. Everett Koop

“The Letter” 1987



Surgeon General under
President Reagan

Champion of –

Sex education

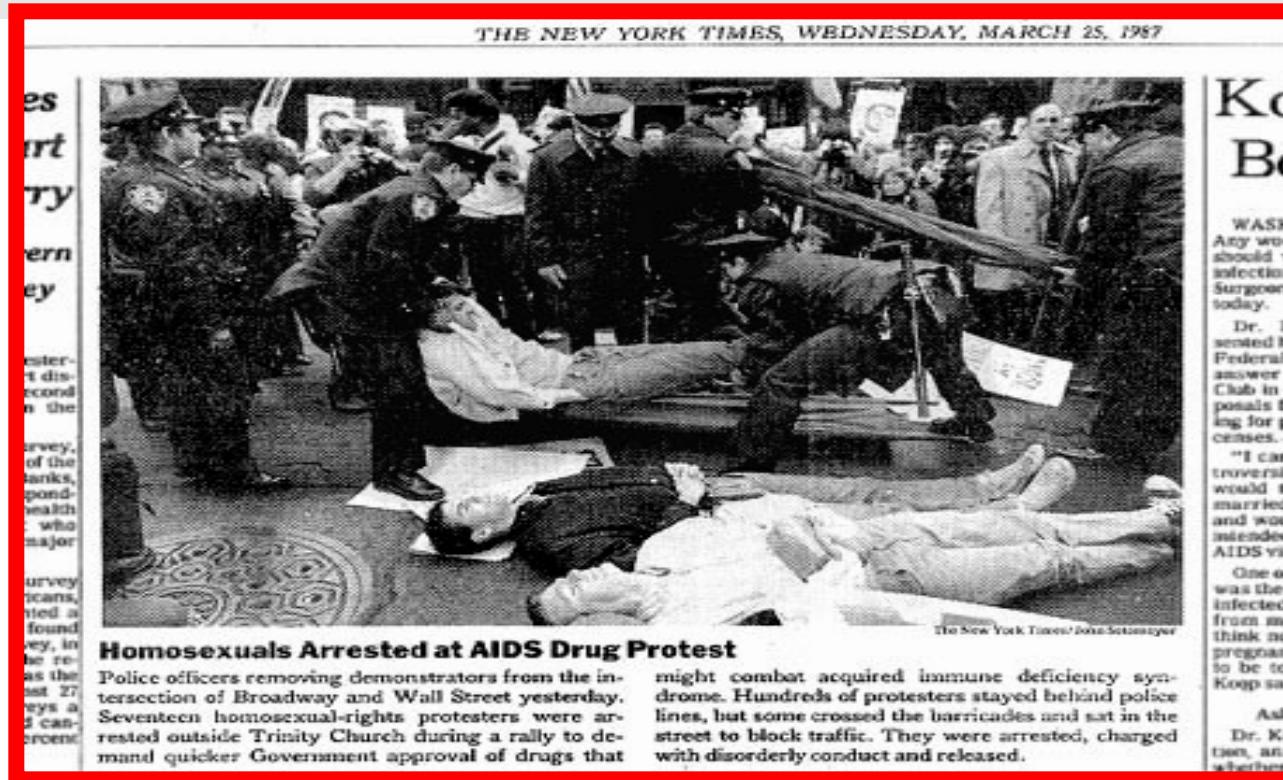
Condoms

Handicapped children

Cigarette harm

“The Letter” was an
AIDS wakeup call

The Response: AIDS COALITION to UNLEASH
POWER: 1987 ACT-UP



Civil disobedience: Wall Street 1987,
NY Post Office 1987, St. Patrick's
Cathedral 1989, NIH 1990 (Now TAG)

Martin Delaney HIV Activist 1945-2008



Founded Project Inform "for medically supervised guerrilla trials" – Major force in NIAID, FDA and ethics ("First in the tent")

MAGIC JOHNSON

Olympic hero & greatest guard in NBA history

The Announcement: 1991



"I have AIDS"

Trumped efforts of millions to
destigmatize HIV infection

The beginning of ART: Jerome Horwitz 1919-2012

Discovered AZT (1964) for cancer
Then ddI **& d4T** → **failed & shelved**
“Great drugs waiting for the right
disease”



Broder, Mitsuya and Yarchoan (NCI)
showed anti-HIV action in CD4 cells

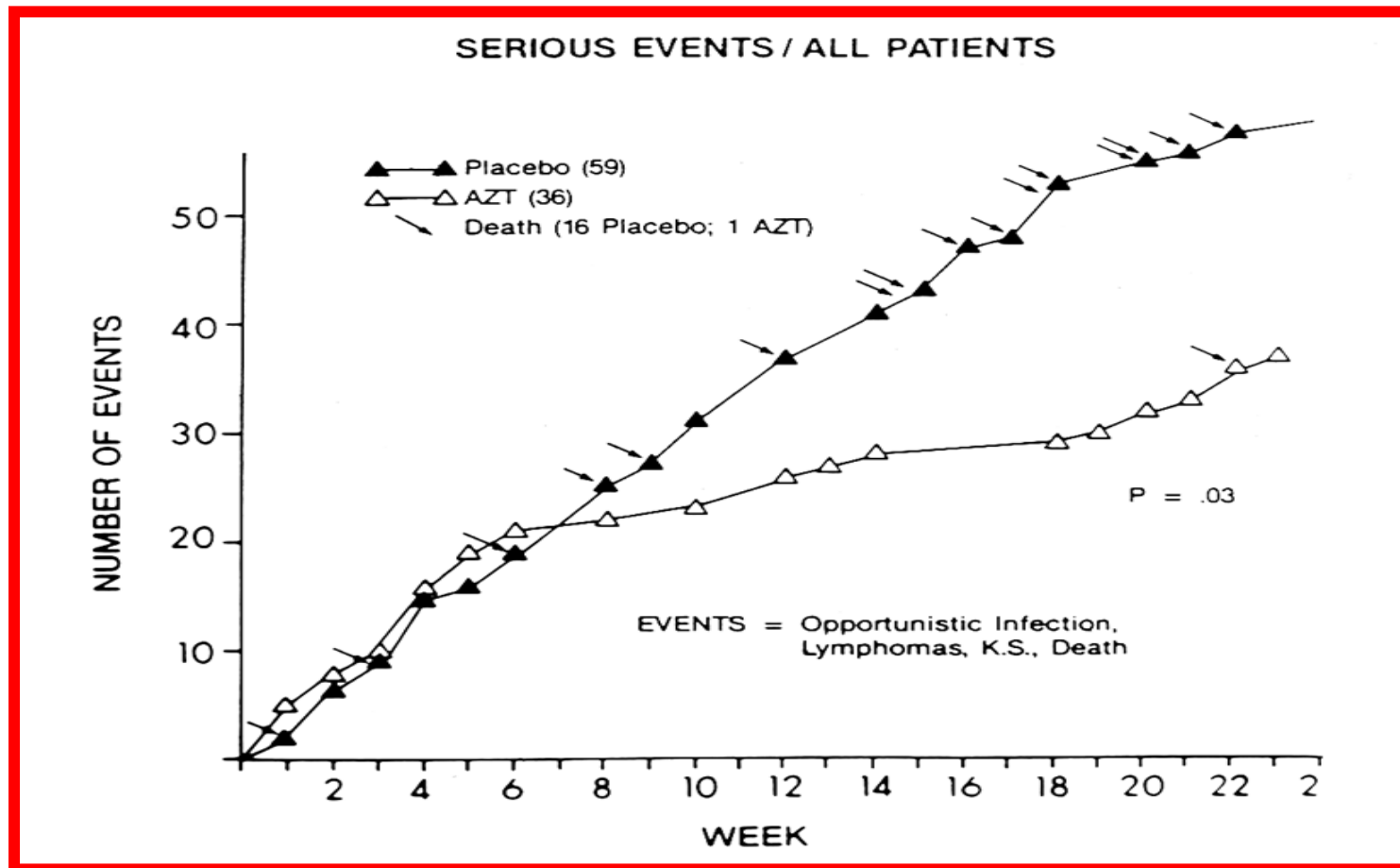


BW got the drug (and the patent)



AZT trial → **First HIV** → **FDA** record
for approval: one cohort, 282
patients, stopped at 6 months





The Trial: AZT vs. placebo (n=282).
 DSMB stopped study: 19 deaths
 (placebo) vs 1 (AZT)
 (Fischl MA. NEJM 1987;317:185)

Agency Hero: Jeff Murray, MD

Deputy Director

Division of Antimicrobial Drug Products for FDA



Major facilitator of HIV drugs (n=28) and, more recently HCV (#37 approved or in trials)

First ART Success: ACTG 076 AZT to prevent perinatal transmission



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ORIGINAL ARTICLE

Volume 331:1173-1180

November 3, 1994

Number 18

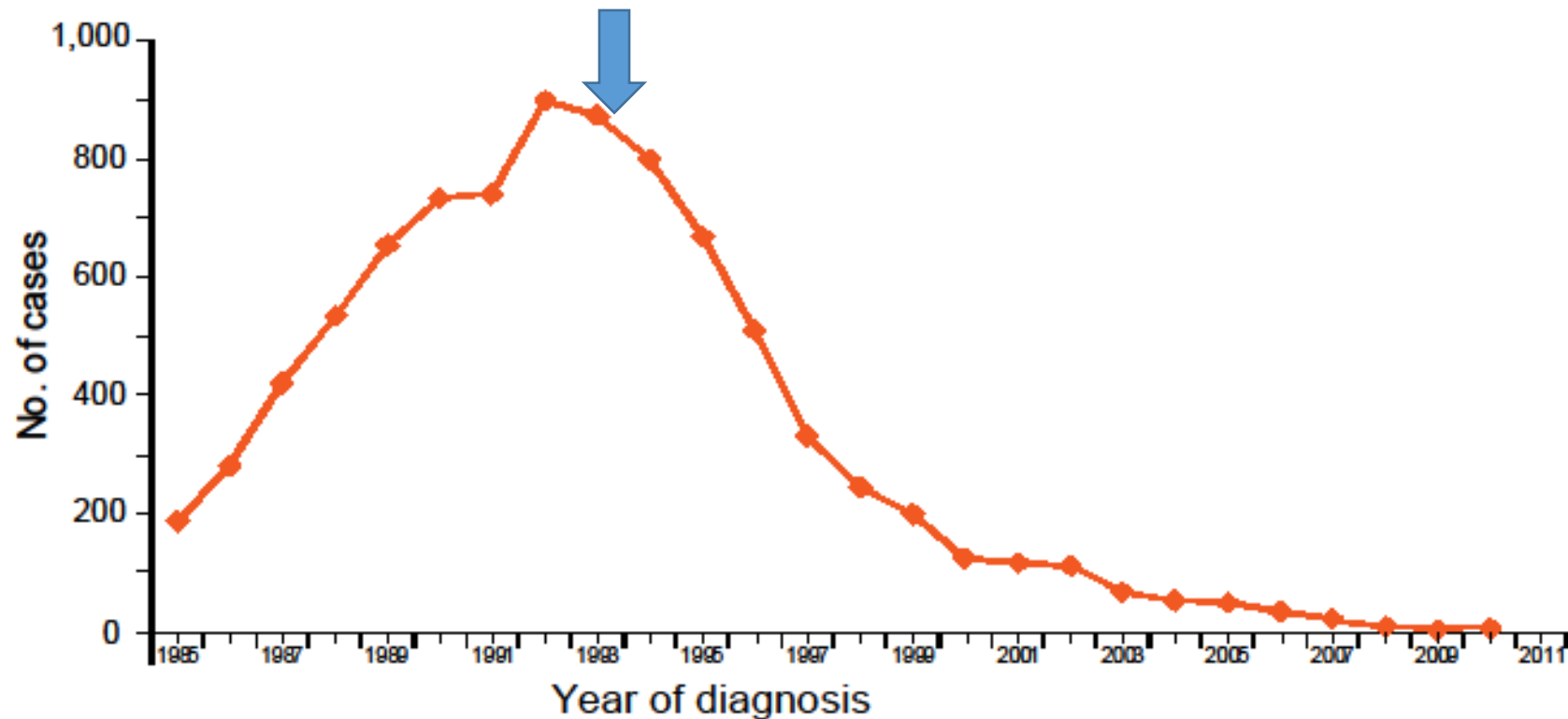
[Next](#) ►

Reduction of Maternal-Infant Transmission of Human Immunodeficiency Virus Type 1 with Zidovudine Treatment

*Edward M. Connor, Rhoda S. Sperling, Richard Gelber, Pavel Kiselev, Gwendolyn Scott,
Mary Jo O'Sullivan, Russell VanDyke, Mohammed Bey, William Shearer, Robert L.
Jacobson, Eleanor Jimenez, Edward O'Neill, Brigitte Bazin, Jean-Francois Delfraissy,
Mary Culnane, Robert Coombs, Mary Elkins, Jack Moye, Pamela Stratton, James Balsley,
for The Pediatric AIDS Clinical Trials Group Protocol 076 Study Group*

Perinatal tx rates: Placebo-23%; AZT-8% (p=0.0006)

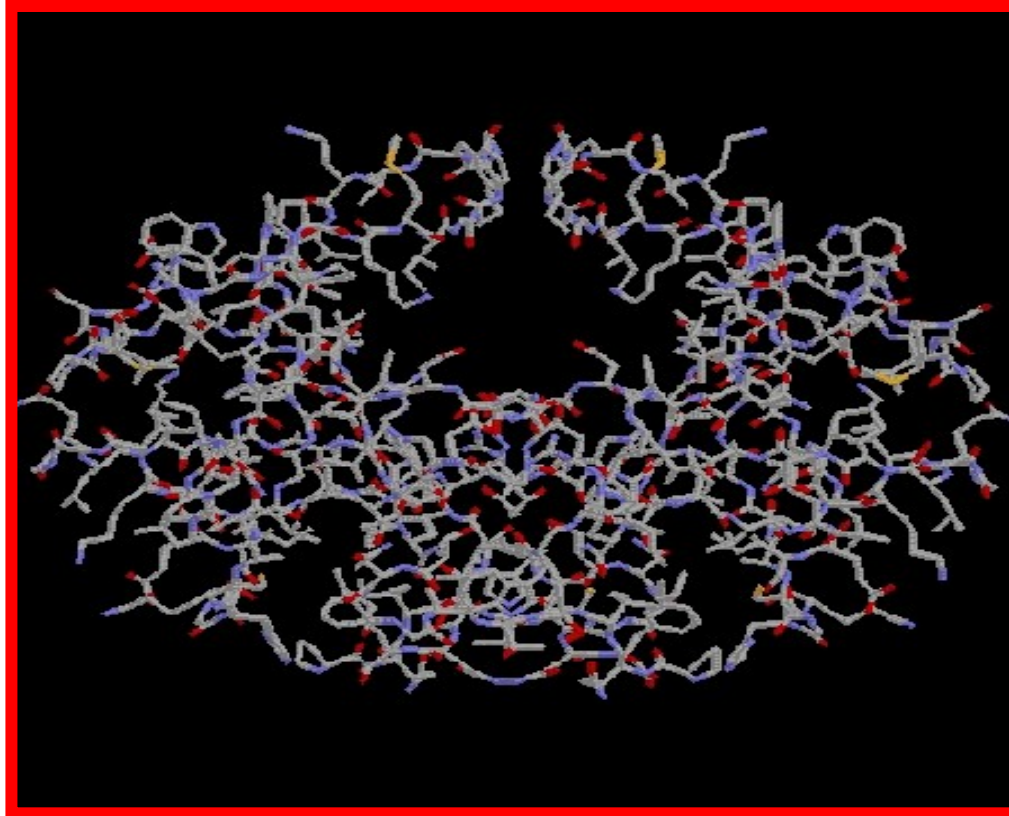
Estimated Numbers of Perinatally Acquired AIDS Cases by Year of Diagnosis, 1985–2010 — United States and Dependent Areas



Note: Data have been adjusted for reporting delays and missing risk-factor information.



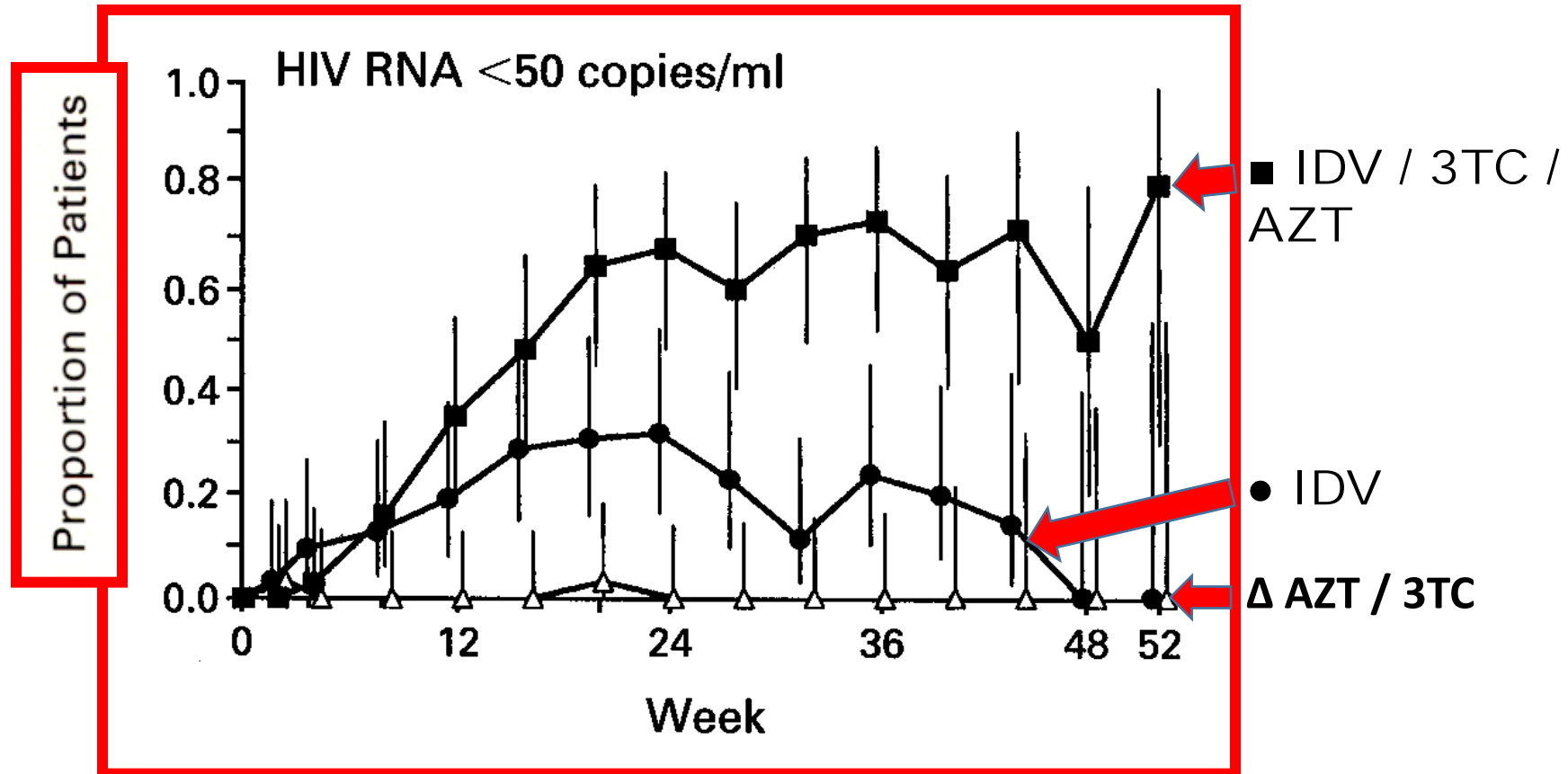
PROTEASE 1996



The development of protease inhibitors
and beginning of HAART

THE STUDY THAT CHANGED AIDS

Gulick RM. Merck 035 NEJM 1997;337:734



HAART: IDV/AZT/3TC

Results for NDV at 52 weeks - 80% vs. zero

David Ho:
Post Vancouver IAS Meeting



“Hit hard and hit early”
(3 ART agents for all
with HIV starting at
diagnosis)

...

Time Magazine:
Man-of-the-year, 1996

RECOMMENDATIONS FOR WHEN TO START ART

(DHHS Panel on ART 1996-2012)

Year	Who by CD4 count
1996	CD4 <500: Merck 035
2000	CD4 <200: Toxicity/Resis
2006	CD4 <350: Half between
2009	CD4 <500: 14 ART drugs
2012	All pts; Any CD4 count

	NRTI	NNRTI	PI	EI	CCR5	II
1987	AZT	-----	-----	-----	-----	-----
1991-92	ddI, ddC	-----	-----	-----	-----	-----
1995	d4T	-----	-----	-----	-----	-----
1996	3TC	-----	SQV -----	-----	-----	
1997	-----	NVP	RTV, IDV	-----	-----	-----
1997	-----	DLV	NFV	-----	-----	-----
1998	-----	EFV	-----	-----	-----	-----
1999	ABC	-----	APV	-----	-----	-----
2000	-----	-----	LPV	-----	-----	-----
2001	TDF	-----	-----	-----	-----	-----
2003	FTC	-----	ATV	ENF	-----	-----
2005	-----	-----	TPV	-----	-----	-----
2006	-----	-----	DRV	-----	-----	-----
2007	-----	-----	-----	-----	MVC	RAL
2008	-----	ETR	-----	-----	-----	-----
2011	-----	RPV	-----	-----	-----	-----
2012	-----	-----	-----	-----	-----	EVG
2013	-----	-----	-----	-----	-----	DTG

The START Trial

Trial: Start ART at CD4 <350 vs >500

Sample size: 4400 in 230 clinics, 36 countries

Started: 1/1/14; first data review 2016

Web statement: Early start is based on

“embarrassingly uninterpretable studies like
NA-ACCORD”

Early review, May 2015: Early ART clearly
superior (53% reduction in HIV complications)

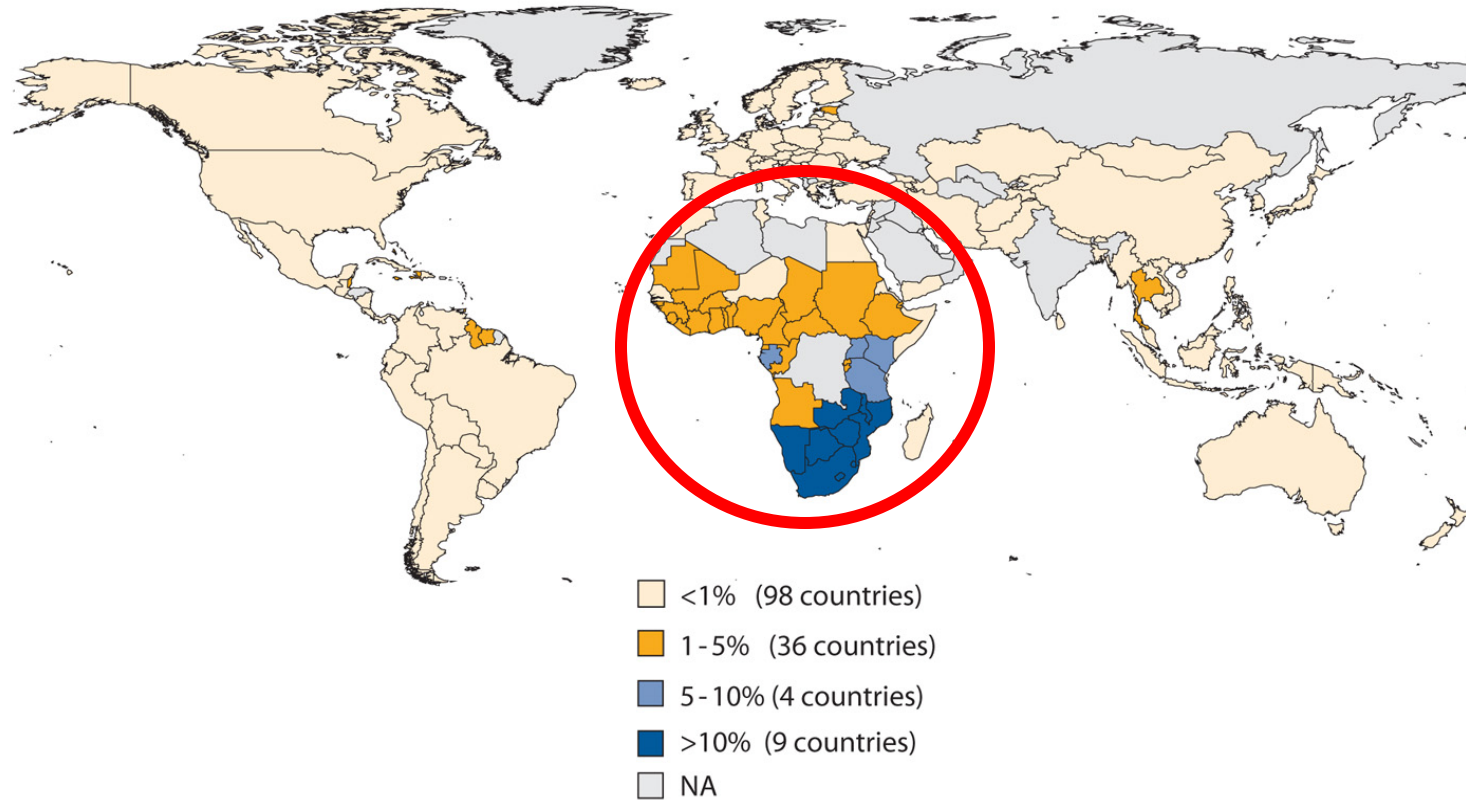
Average duration of life after AIDS diagnosis in a 25 year old man

Year	Age of Death	Added years
1995	28 years	3
1997-99	48 years	25
2000-05	64 years	39
2011-12	73 years*	48

* Moore Clinic

GLOBAL HIV- Subsaharan Africa:12% global population 69% of HIV cases

Figure 1: Adult HIV Prevalence Rate (Ages 15–49), 2011^{1,7}



Current Global Snapshot

Zimbabwe: Lifetime Probability of AIDS- 60%!



White House meeting of President Bush & Joe O'Neill



President George W. Bush

PEPFAR: 2002



Bush: Do those HIV drugs work?

O'Neil: "Let me tell you about my morning in the Moore Clinic"

Bush: "Get Tony, we need to do something. Think big - really big"

President George W. Bush



Fauci: "Thinking big"

Collaborators -

Dybul, Mugenyi,
Goosby, Pape

Plan Proposed

Would be
considered

January 2003:

"Seldom have we
been offered the
opportunity to do
so much for so
many"

Peter Mugenyi and Laura Bush State of the Union Address



Bush: "\$15 billion for AIDS in Africa"

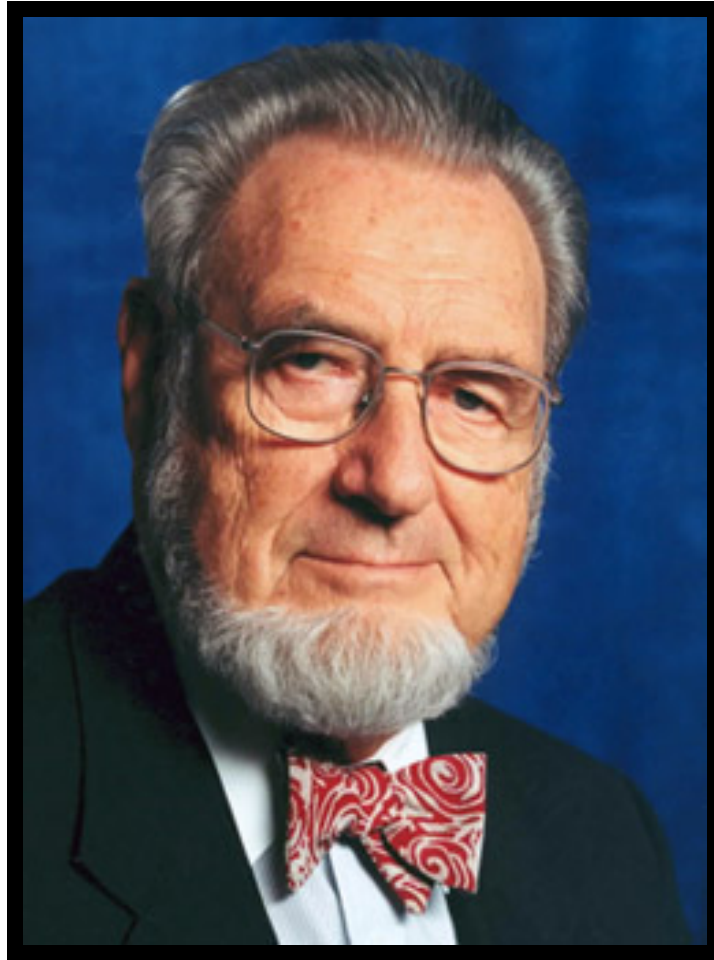
Mugenyi: **Jumped up** → **cheered** →
hugged the First Lady

Tony Fauci – Medal of Freedom



President Bush awarding Dr. Fauci
the Presidential Medal of Freedom – June 18, 2008

Everett Koop Award “The boys from Brooklyn”



2011

First C. Everett Koop
Award – Dr. Fauci
(Forum, 2011)

2012

Second Award – from
Dr. Fauci to Dr. Koop
(Forum, 2012)

JB- Personal HIV History at Hopkins

1980: recruited to Hopkins to start an ID Division and continue *C difficile* work

1983: Frank Polk changed career-irreversible passion for starting an HIV program

1983: HIV program launched: Moore Clinic quickly filled & hidden in basement

1986: Hospital funded HIV in-pt Osler- 8

1988: Cardiology fellow- needlestick AIDS

1991: Hopkins surgeon dies with HIV; Test
1000: 1 positive; chair incident

2014: O8 closed & converted to Ebola Center

What was good about it

Filled a desperate need in tradition of Osler & J Hopkins

1984: Dr. Heyssel requested AIDS Program plan & budget

1984-94: US News & World Report- Hopkins always #2

1985: Lambert

1989: AIDS Busters Softball team won the Hopkins league

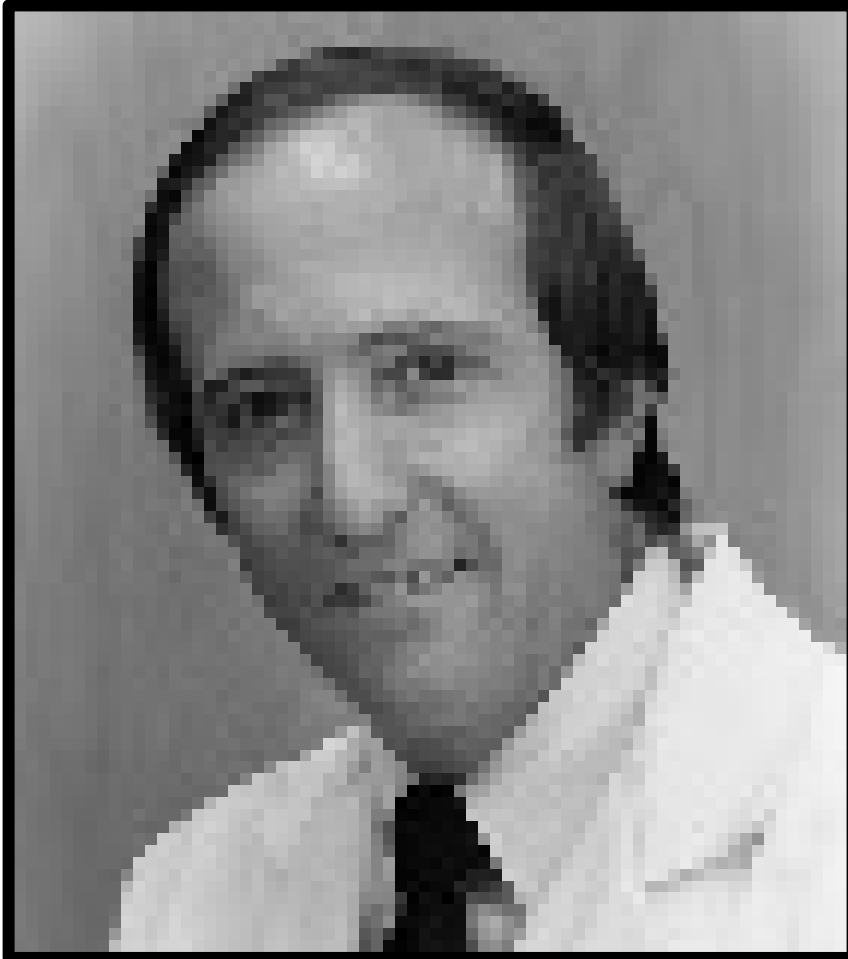
beating the Maintenance men in the playoffs 4-2

1993: 10th anniversary – Bo Diddly celebration

1983-2006: 24 faculty promoted-Prof based on work in 14 depts-Ob,Neuro,Basic,Card,Psych,Onc,Peds,Pharm,TB,HCV

FRANK POLK, MD

The 1983 Career change



“There’s this new disease. Someone will find the virus-not me. BUT Epidemiology-That’s for me”

Started MACS and ALIVE cohorts:>1000 publications

Dr. Robert Heyssel:



President JHH-

Birth of Osler 8

“It doesn’t
matter (an
AIDS Ward).
It’s a moral
imperative”

1986



**Osler 8 nurses:
1986-2013: Perennial best nursing unit-
JHH. Unique service for knowledge of
HIV and this patient population**

Thomas Quinn, MD

Director of Johns Hopkins Center for Global Health.



Author of > 1000 publications

34 global HIV Centers, 450 faculty, 710 projects in 110 countries funded at \$75M/yr

David Thomas, MD



CHIEF, Infectious
Disease Division
& international
leader- HCV
basic science

Mark Sulkowski, MD

**National leader in HCV and HIV/HCV
treatment**



**Director, Hopkins
Center for Viral
Hepatitis**

Joel Gallant, MD



**(Arguably)
HIV's best
clinician;
National and
international
HIV guidelines,
President
HIV Med Assoc**

Richard Chaisson, MD



**Co- PI JHU CFAR;
International
leader- TB & HIV**

- * Chair-NIH TB
Clin TRIAL Group**
- *TB trials-INDIA,
Brazil, Africa**
- *CHAIR-CREATE
(TB-GATES)**

RICHARD MOORE, MD

Internal Medicine



**Master of design,
management and
analysis of cohorts.**

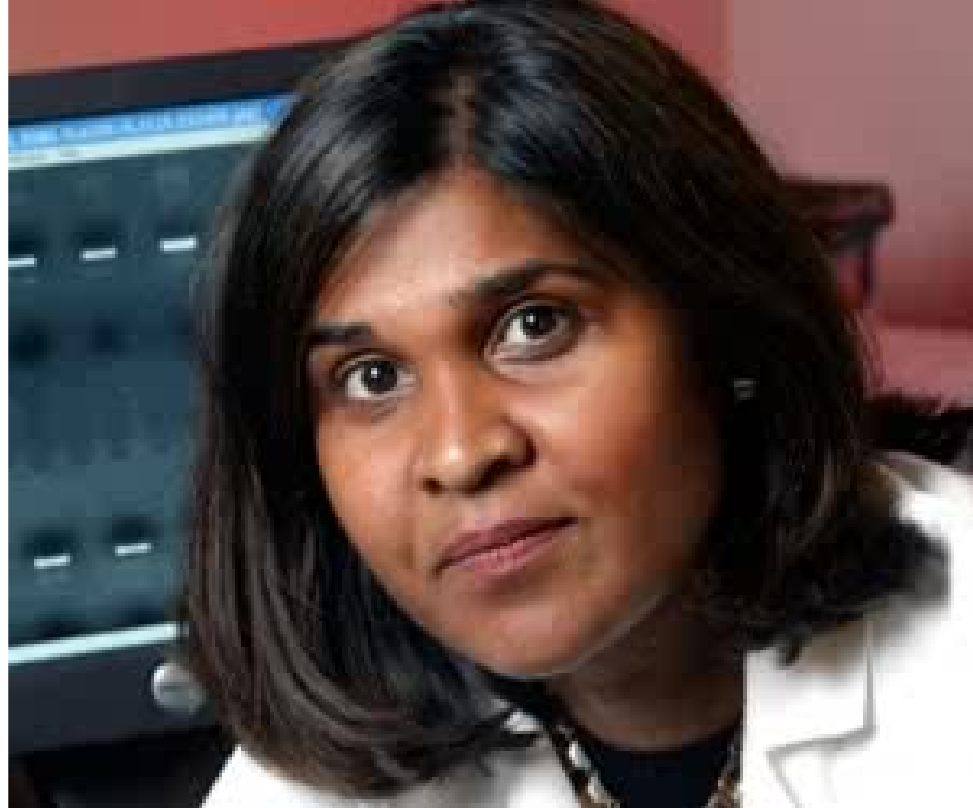
**PI of NA-ACCORD,
NIH- sponsored, 8
yrs, 25 cohorts,
>200 sites,
150,000 patients**

Robert Siliciano, MD, PhD



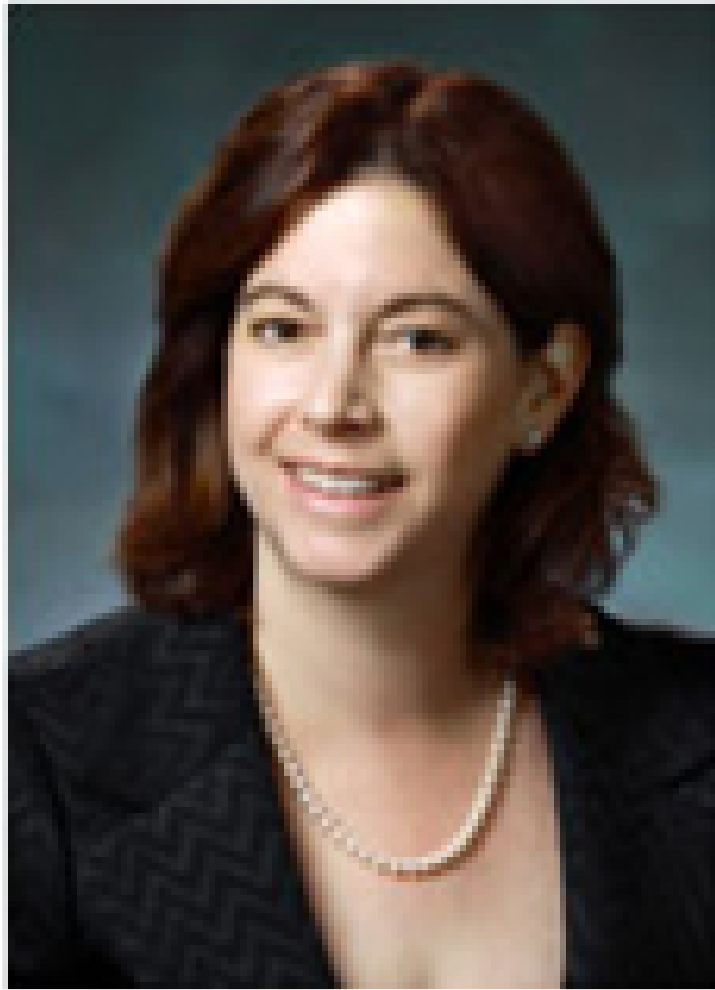
**H. Hughes
Investigator,
Leading
scientist
in HIV basic
research and
“the Cure”**

Deborah Pursuad, MD



Pediatrician, HIV Basic
Science

WENDY POST, MD



CARDIOLOGY

Leader in
cardiac
complications
of HIV infection

Jean Anderson, MD

Ob/Gyn



Regional, national and international leader in Obstetric and gynecologic HIV care.

JUSTIN McARTHUR, MD

Neurology



**Leading US
Neurologist
in HIV neurologic
clinical care
and research**

Rich Ambinder, MD

Oncology



Chair, NIH-HIV
malignancy
consortium;
Extraordinary
in clinical care
and research

Charles Flexner, MD



Pharmacology

- *Pharmacology of HIV and role of immune activation in HIV**
- *Director Hopkins ACTG**
- *Consultant to Gates/Clinton**
- *Chair ACTG Translational Research**

Glenn Triesman, MD, PhD

Psychiatry



Simply
extraordinary;
Leader in HIV
psychiatry and
The meaning of
life

WHAT HAS HIV TAUGHT US

- **Science leadership: A. Fauci**
- **Pharma leadership: Merck – Indinavir**
- **Oslerian Medicine: HIV providers <1997**
- **Greatest humanitarian effort: PEPFAR (Bono)**
- **Government leadership: E. Koop**
- **Implementation science: 076**

"AIDS Busters" Softball Championship vs Maintenance Department, 1989



Big Challenges Build Strong Bonds