

Calderone Prize Lecture

**A New Yorker's AIDS
Journey Across Seven U.S.
Presidencies**

Anthony S. Fauci, MD

April 27, 2023

1900: Mulberry Street in Little Italy



Bensonhurst/Dyker Heights, Brooklyn, New York



Fauci Pharmacy and Apartment -- 13th Avenue and 83rd Street, Brooklyn



**Stephen Fauci, R.Ph. (Columbia University
College of Pharmacy, 1921), Eugenia
Fauci (Hunter College, 1921)**





Iconic Schwinn Bike



Our Lady of Guadalupe School
Bensonhurst Neighborhood, Brooklyn, NY



**Regis High School, 84th Street,
New York, NY, Class of 1958**



Holy Cross College Worcester, MA, Class of 1962



THE WRATH OF ACHILLES



The **ILIAD**
of Homer

L. A. RICHARDS

HOMER'S
ODYSSEY



JAMES M. HEWITT

Cornell University Medical College / New York Hospital



**525 East 68th
Street**

The New York Hospital – Cornell Medical Center



**Cornell Medical School –
1962-1966**

**Department of
Medicine House
Staff – 1966**



From New York to Bethesda



NIAID Laboratory of Clinical Investigation, 1969





The NEW ENGLAND JOURNAL of MEDICINE

VOLUME 281

DECEMBER 24, 1972

NUMBER 25

Original Articles

**Use of Colloidal Iron in Iron
Response to Hypochromic Anemia. 171**

By the Committee for
Practice

**Case Records of the
Massachusetts General Hospital**

Volume 101, Number 11, November 1972

Medicine

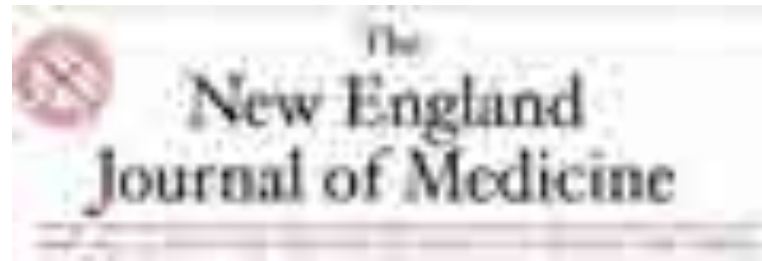
Original Articles of
Internal Medicine, Pediatrics, Neurology,
Ophthalmology, and Psychiatry

THE JCI NUMBER IS 100-581, NOVEMBER 1972

**Wegener's Granulomatosis:
Studies in Eighteen
Patients and a Review of
the Literature**

**Anthony S. Fauci and
Sheldon M. Wolff**

A Future for Infectious Disease Experts?



September 21, 1978

SPECIAL ARTICLE

THE DOCTORS' DILEMMA

ROBERT G. PETERSDORF, M.D.

- “Even with my great personal loyalties to infectious disease, I cannot conceive a need for 309 more infectious-disease experts unless they spend their time culturing each other....”

MMNR

June 5, 1981

Pneumocystis Pneumonia - Los Angeles

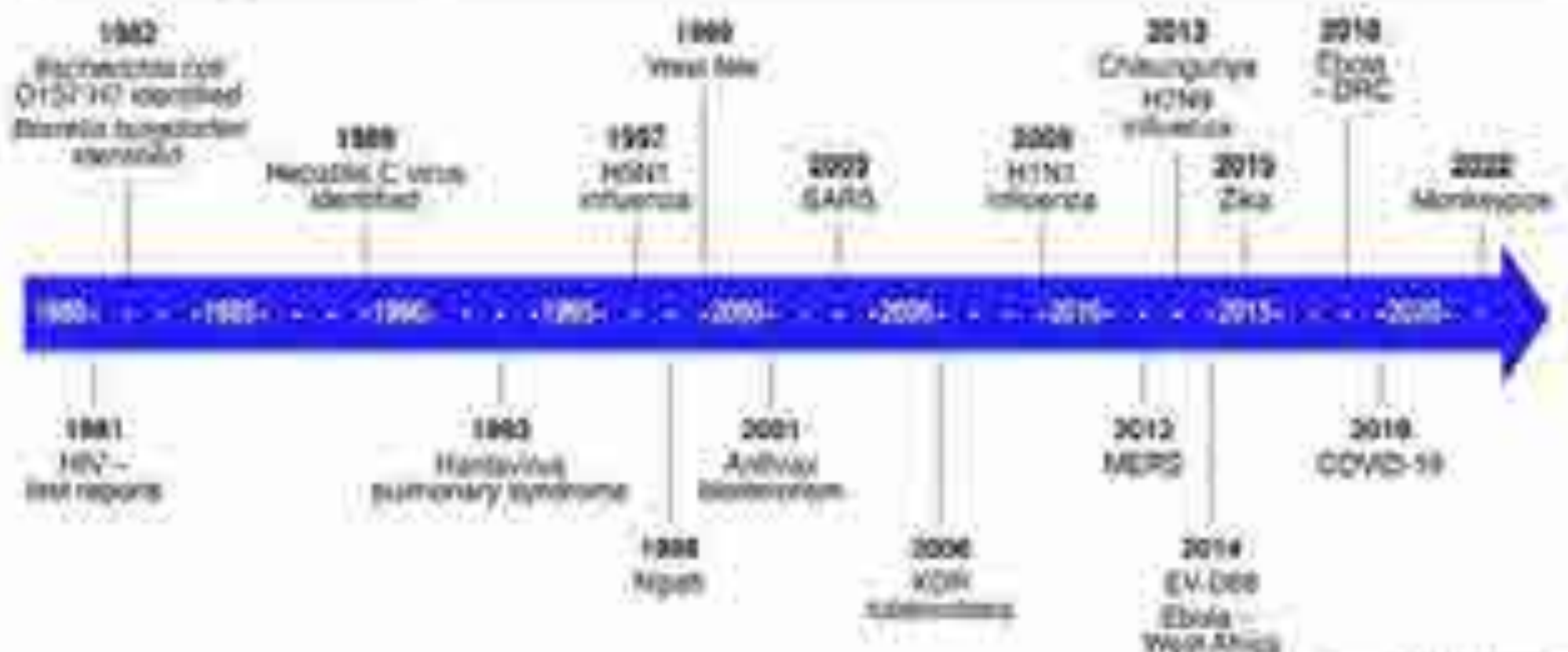
Approximately 100 cases of *Pneumocystis carinii* pneumonia (PCP) were reported in Los Angeles County during the first 5 months of 1981. The majority of cases were in homosexual men, and the disease was associated with a high mortality rate. The epidemiology and clinical features of PCP in Los Angeles are discussed.

July 1, 1981

Kaposi's Sarcoma and Pneumocystis Pneumonia Among Homosexual Men - New York City and California

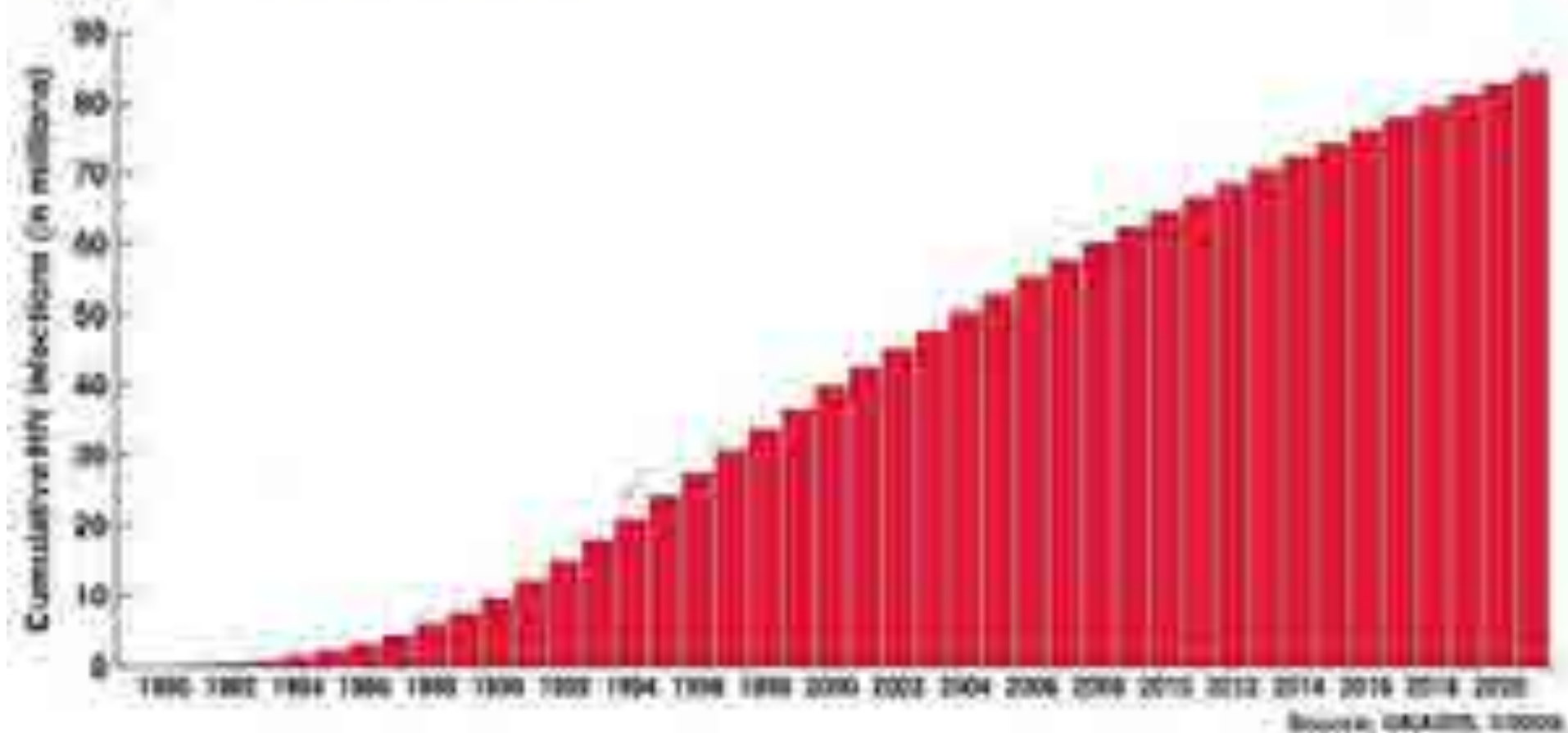
Approximately 100 cases of Kaposi's sarcoma (KS) and 100 cases of *Pneumocystis carinii* pneumonia (PCP) were reported in New York City and California during the first 6 months of 1981. The majority of cases were in homosexual men, and the disease was associated with a high mortality rate. The epidemiology and clinical features of KS and PCP in New York City and California are discussed.

Selected Events in Infectious-Disease Emergence, 1981-2023



Source: AS Fauci, *NEJM* 12/1/2022.

84.2 Million Cumulative HIV Infections Through 2021



Global HIV Statistics



- **In 2021:**
 - 38.4 million living with HIV
 - 1.5 million newly infected
 - 650,000 deaths
- **Since the start of the pandemic**
 - 84.2 million infected with HIV
 - 40.1 million deaths

Seven U.S. Presidencies and HIV/AIDS

■ Ronald W. Reagan	1981-1989
■ George H.W. Bush	1989-1993
■ William J. Clinton	1993-2001
■ George W. Bush	2001-2009
■ Barack H. Obama	2009-2017
■ Donald J. Trump	2017-2021
■ Joseph R. Biden, Jr.	2021-

AIDS During the Reagan Administration, 1981-1989



- **Public reticence and stigma towards AIDS**
- **Failure to use the “Bully Pulpit” of the Presidency to address AIDS**
- **Much activity behind the scenes**



The
**New England
Journal of Medicine**

**Abnormalities of B-Cell Activation and
Immunoregulation in Patients with the
Acquired Immunodeficiency Syndrome**

HO LANE, AS FARRIS et al.



The
**New England
Journal of Medicine**

**Qualitative Analysis of
Immune Function in
Patients with the
Acquired
Immunodeficiency
Syndrome**

**Evidence for a Selective Defect in
Soluble Antigen Recognition**

HO LANE, AS FARRIS et al.

Discovery of HIV as the Cause of AIDS, 1983-84





F. Barré-Sinoussi et al.
Science 220:868, 1983

1983

5 May 1984 Vol. 224 No. 4689
SCIENCE
PUBLISHED WEEKLY

Detection, Isolation, and
Continuous Production of
Cytopathic Retroviruses
(HTLV-III) from Patients
with AIDS and Pre-AIDS

F. Barré-Sinoussi et al.

Antibodies Reactive with
Human T-Lymphotropic
Retroviruses (HTLV-III) in
the Serum of Patients with
AIDS

M. S. Hirschman et al.

Structural Analysis of a
Subgroup of Human
T-Lymphotropic
Retroviruses (HTLV-III)
Associated with AIDS

J. S. Brown et al.

Frequent Detection and
Isolation of Cytopathic
Retroviruses (HTLV-III)
from Patients with AIDS
and at Risk for AIDS

M. S. Hirschman et al.



1984

Dark Days in AIDS Clinical Medicine



Examples of Early Experimental Approaches to AIDS Therapy

- Suramin
- AL 721
- HPA-23
- Ribavirin
- Isoprinosine
- Thymosin
- Alpha-interferon
- Interferon-gamma
- Interleukin-2
- Thymic implantation
- Lymphocyte transfer
- Bone-marrow transplantation
- DNCB

THE LANCET

February 23, 1985

**Antimoniotungstate
(HPA-23) Treatment
of Three Patients
with AIDS and One
With Prodrome**



Rock Hudson
1925-1985



The
**New England
Journal of Medicine**

**Survival with the Acquired
Immunodeficiency Syndrome**
Experience with 5833 Cases in New York City

R. Rothenberg et al.

- 5,833 AIDS cases diagnosed before 1986
- Probability of death at 1 year: 51 percent
- Probability of death at 5 years: 85 percent

1984: Appointment as NIAID Director

The NIH Record

U.S. Department of Health and Human Services November 20, 1984 Vol. 13(11) No. 24 National Institutes of Health

Dr. Anthony Fauci, Expert on Immunity and AIDS, Named Director of Nat'l. Institute of Allergy and Infectious Diseases

Dr. Anthony S. Fauci has been named Director of the National Institute of Allergy and Infectious Diseases, effective Nov. 21.

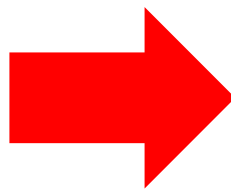
NIAID conducts and supports research to better understand the causes of allergic, immunologic and infectious diseases, and to develop better means of preventing, diagnosing and treating such diseases.

Dr. Fauci, 45, an internationally renowned expert on the immune system, has been Chief of NIAID's Laboratory of Immunoregulation since 1980 and deputy clinical director of the Institute since 1977.

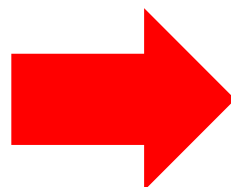
"I am extremely pleased that Dr. Fauci will take over the leadership of this important Institute," HHS Secretary Margaret M. Heckler said in announcing the appointment. "His unique background, particularly in the fields of immunology and infectious diseases, will be of key importance in maintaining and accelerating our momentum in these crucial areas of research."



Dr. Fauci is internationally renowned for his expertise on the immune system.



**1st Congressional
Testimony (AIDS)
March 1985**



**~275th Congressional
Testimony (Mpox)
September 2022**

Early NIH AIDS Programmatic Highlights

- **1981** First AIDS patients seen at NIH Clinical Center
- **1983** Projet SIDA in Zaire; Haiti
- **1983** Multicenter AIDS Cohort Study
- **1986** AIDS Program established -- became DAIDS
- **1986** AIDS Treatment Evaluation Units – became ACTG
- **1986** Centers for AIDS Research (CFARs)
- **1987** AIDS Vaccine Evaluation Group
- **1987** First AIDS vaccine clinical trial, at NIH
- **1988** Pediatric AIDS Clinical Trials Units
- **1988** Women and Infants Transmission Study

Developing AZT and Other First-Generation Nucleoside Reverse Transcriptase Inhibitors



Drs. Robert Yarchoan, Hironaki Mitsuya, and Samuel Broder



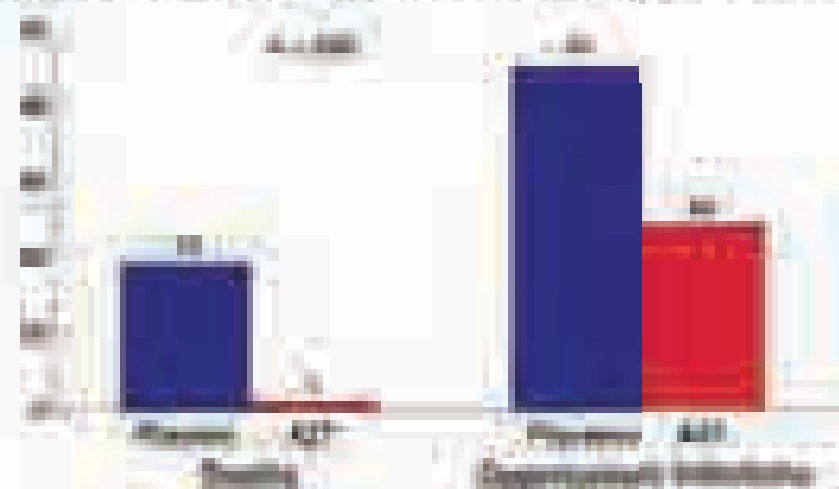
The
**New England
Journal of Medicine**

VOLUME 337 MAY 21, 1997 NUMBER 21

**The Efficacy of
Azidothymidine (AZT)
in the Treatment of
Patients with AIDS
and AIDS-Related
Complex: A Double-
Blind, Placebo-
Controlled Trial**

Margaret A. Fischl, et al.

BW OC2: 24-Week Study of AZT vs. Placebo in Patients with AIDS or ARC



September 1985: President Reagan Mentions AIDS Publicly for the First Time

REAGAN DEFENDS FINANCING FOR AIDS

Says Government Makes 'Vital
Contribution' to Research
— Cites Budget Limits

By PHILIP BOFFEY

Special to the New York Times

WASHINGTON, Sept. 17 — President Reagan, who has been accused of public indifference to the AIDS crisis by groups representing victims of the deadly disease, said last night that his Administration was already making a "vital contribution" to research on the disease within the limits imposed by "budgetary restraints."

Reagan Makes His First Public Speech About AIDS, at Request of Elizabeth Taylor -- May 1987



Visit to NIH, July 23, 1987



Reagan Establishes National Commission on AIDS – July 24, 1987



Birth of AIDS Activism

New York, 1982

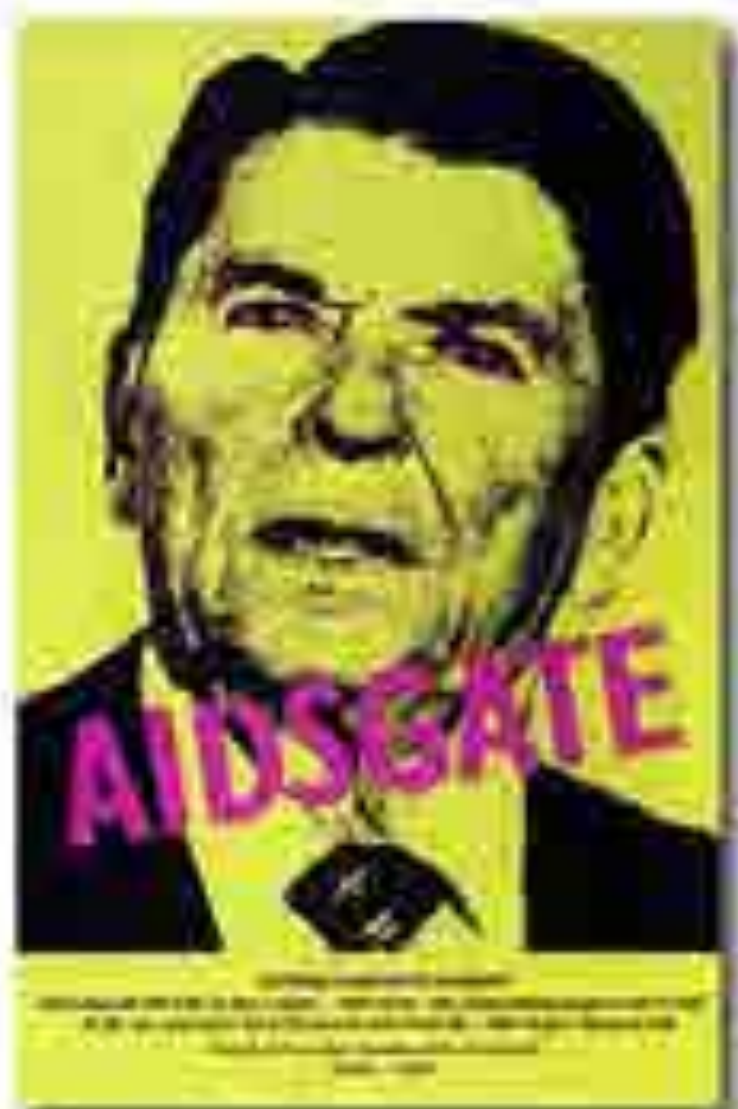


San Francisco, 1984



New York, 1987





Demonstrators and Police on Wall Street, March 24, 1987





—San Francisco Examiner—

IMAGE

June 26, 1988

IMAGE ESSAY By Larry Kravitz

I CALL YOU MURDERERS

An agitator must be an agitator, says the author, Fanny, at the National Institute of Aging and Veterans Affairs.

There is no mystery in the world. There is only a lack of understanding. The world is a vast, complex, and often terrifying place. It is a place where the most powerful forces are at work, and where the most terrible crimes are committed. It is a place where the most beautiful things are often hidden in plain sight, and where the most terrible things are often hidden in plain sight. It is a place where the most powerful forces are at work, and where the most terrible crimes are committed. It is a place where the most beautiful things are often hidden in plain sight, and where the most terrible things are often hidden in plain sight.

Protest at FDA, October 11, 1988



The New York Times

June 26, 1989

AIDS Researcher Seeks Wide Access to Drugs in Tests

By David K. Rieck

In a major shift long sought by those involved in the fight against AIDS, the chief of Federal AIDS research has called for a new system that would allow patients far greater access to experimental drugs.

Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said such a system would provide promising drugs to some people with AIDS at the same time as the drugs are undergoing rigorous clinical trials. "I call this a parallel-track approach to clinical trials," Dr. Fauci said in a telephone interview.

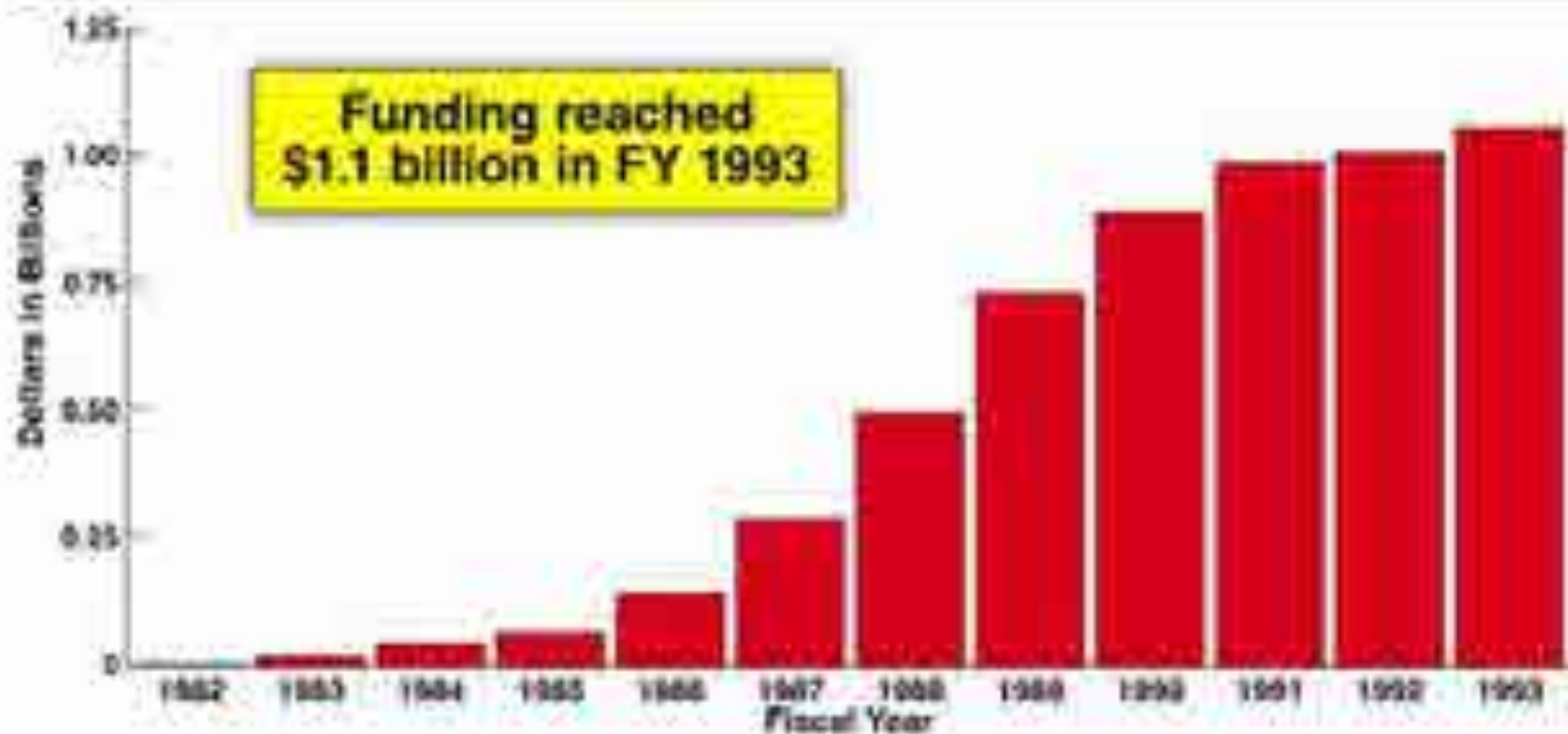
AIDS During the George H.W. Bush Administration, 1989-1993



- **Funding growth**
- **Treatment progress**
- **Increased understanding of HIV pathogenesis**
- **Impact of AIDS activism**



NIH AIDS Research Funding, FY 1982 to FY 1993



New Insights into HIV Pathogenesis



nature

**Rapid Turnover of Plasma Virions
and CD4 Lymphocytes in HIV-1
Infection**

DD Ho, M Markowitz, et al.

**Viral Dynamics in Human
Immunodeficiency Virus Type 1
Infection**

X Wei, GM Shaw, et al.

August 1989: Reported AIDS Cases Reach 100,000 in the United States



First 100,000 Cases of Acquired Immunodeficiency Syndrome – United States

- **The first 50,000 cases of AIDS were reported from 1981 to 1987; the second 50,000 were reported between December 1987 and July 1989.**

Meeting with ACT-UP Members at NYC LGBT Center, October 1989



Photo credit: Tracy Litt

Storm the NIH, May 21, 1990



Peter Staley of ACT UP



WINNER - BEST DOCUMENTARY

WINNER - BEST FIRST FILM

WINNER - IGA AWARDS

BEST DOCUMENTARY

3 CINEMA EYE AWARD NOMINATIONS

*** W W ASTONISHING ***

IT'S HARD TO OVERSTATE THE IMPORTANCE
OF THIS DOCUMENTARY. IT'S A MUST-SEE
FOR EVERYONE WHO CARES ABOUT THE
WORLD WE LIVE IN. IT'S A MUST-SEE
FOR EVERYONE WHO CARES ABOUT THE
WORLD WE LIVE IN.

HOW TO SURVIVE A PLAGUE

BY
FRANK RICHARDS



HARVARD UNIVERSITY
INSTITUTE OF POLITICS

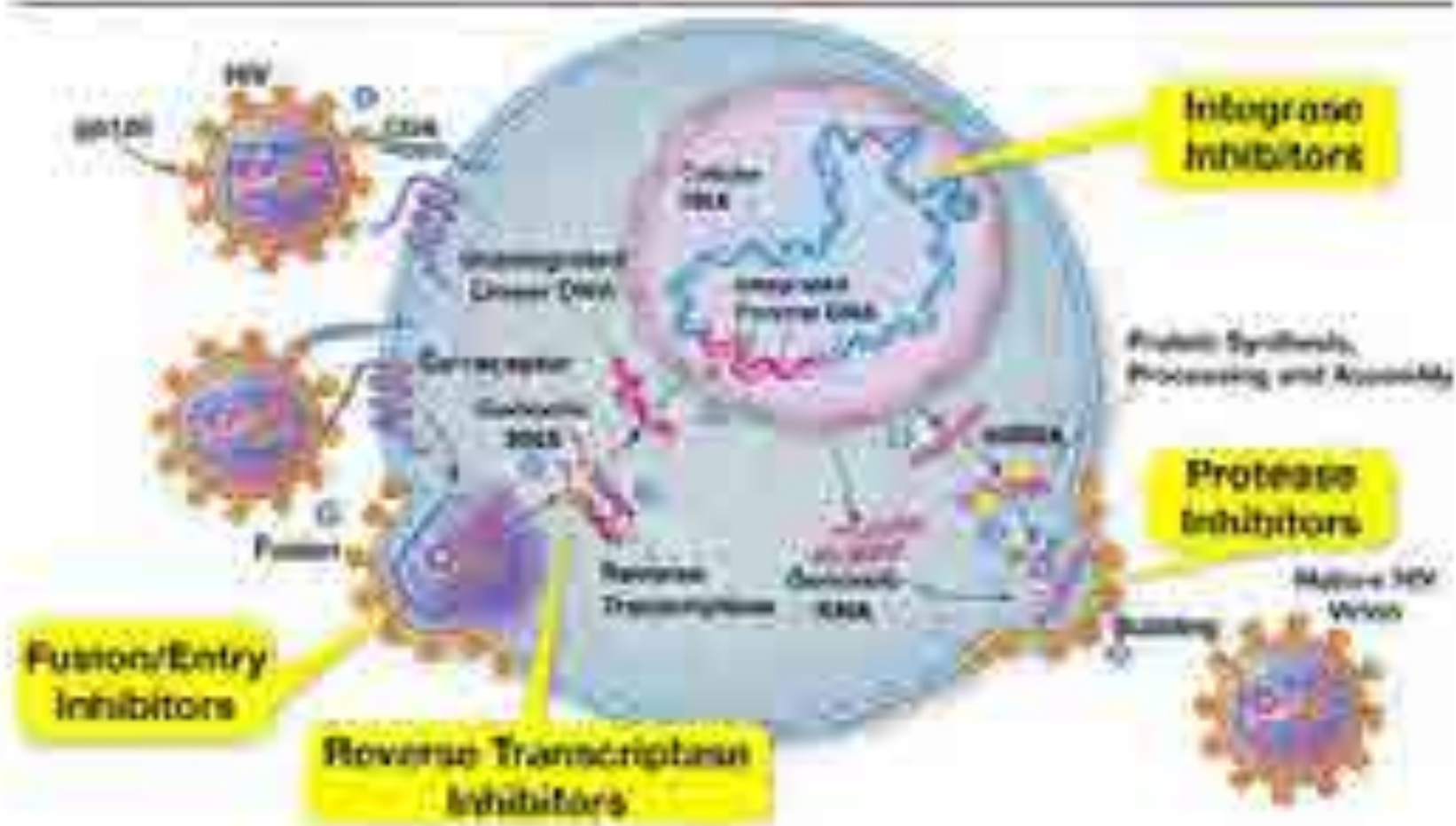


AIDS During the Clinton Administration, 1993-2001



- **ART to Prevent Mother-to-Child Transmission**
- **Advent of Combination ART**
- **NIH Vaccine Research Center**

HIV Replication Cycle: Targets for Antiretroviral Therapy





The
New England
Journal of Medicine

VOLUME 358

NUMBER 1

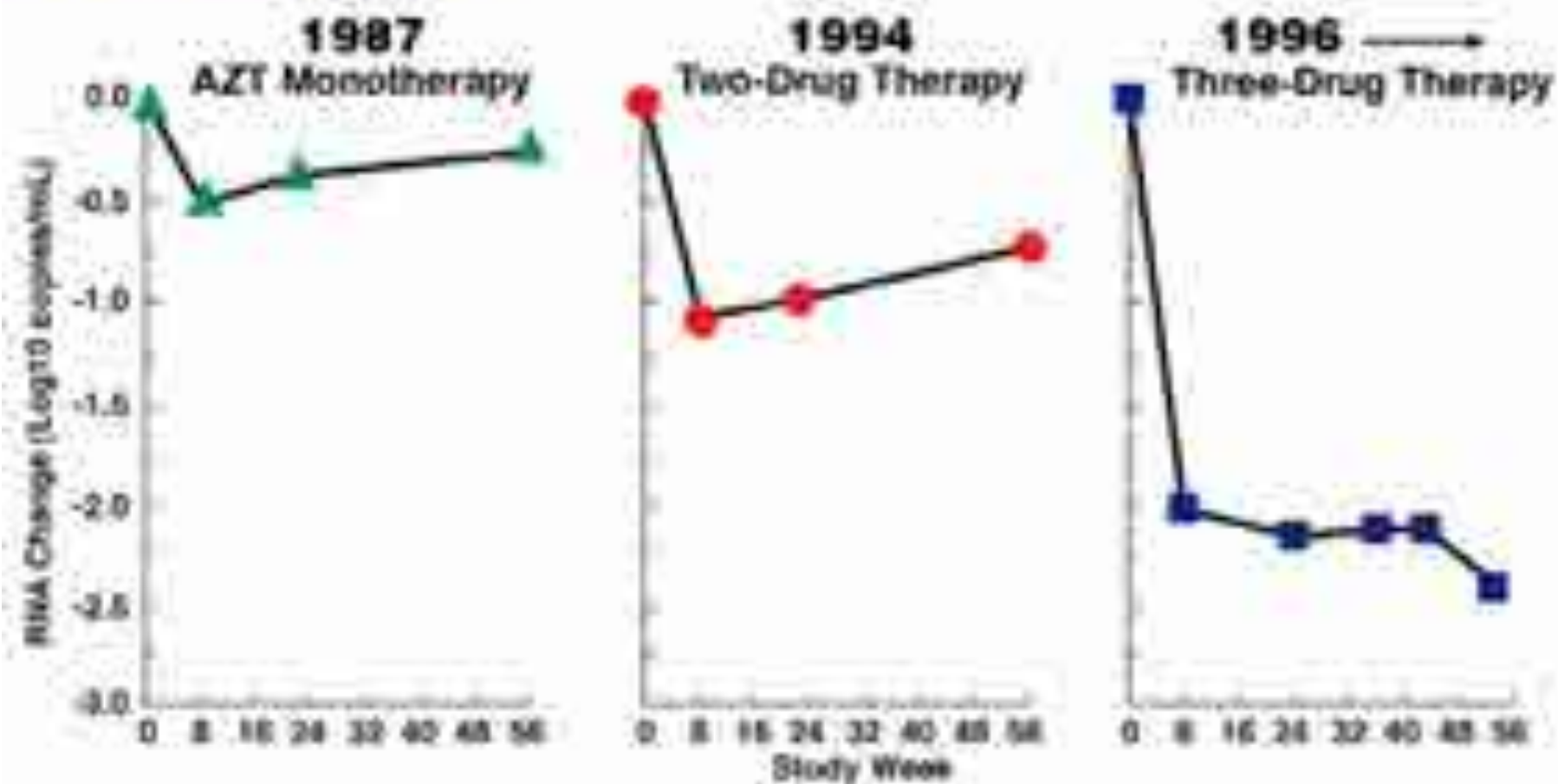
SEPTEMBER 14

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

EM Connor, J Balseley et al. for the PACTG Protocol 076 Study Group

- 363 pregnant women given 5 AZT pills/day starting in 2nd or 3rd trimester + AZT during labor/delivery
- Newborns given 6 wks oral AZT every 6 hrs
- AZT regimen reduced MTCT of HIV by 2/3 compared to placebo

Evolution of Treatment Strategies for HIV Disease



Vancouver 1996: Highly Active Antiretroviral Therapy Highlighted at IAS

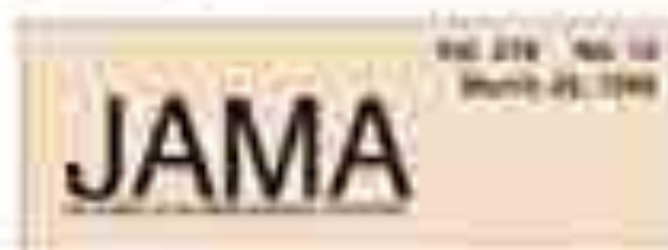


Treatment with Indinavir, Zidovudine, and Lamivudine in Adults with Human Immunodeficiency Virus Infection and Prior Antiretroviral Therapy

SA Gullo, AJ Coombs, et al

A Controlled Trial of Two Nucleoside Analogues plus Indinavir in Persons with Human Immunodeficiency Virus Infection and CD4 Cell Counts of 200 per Cubic Millimeter or Less

EE Hershman, SA French, et al for the AIDS Clinical Trials Group
and Study Team



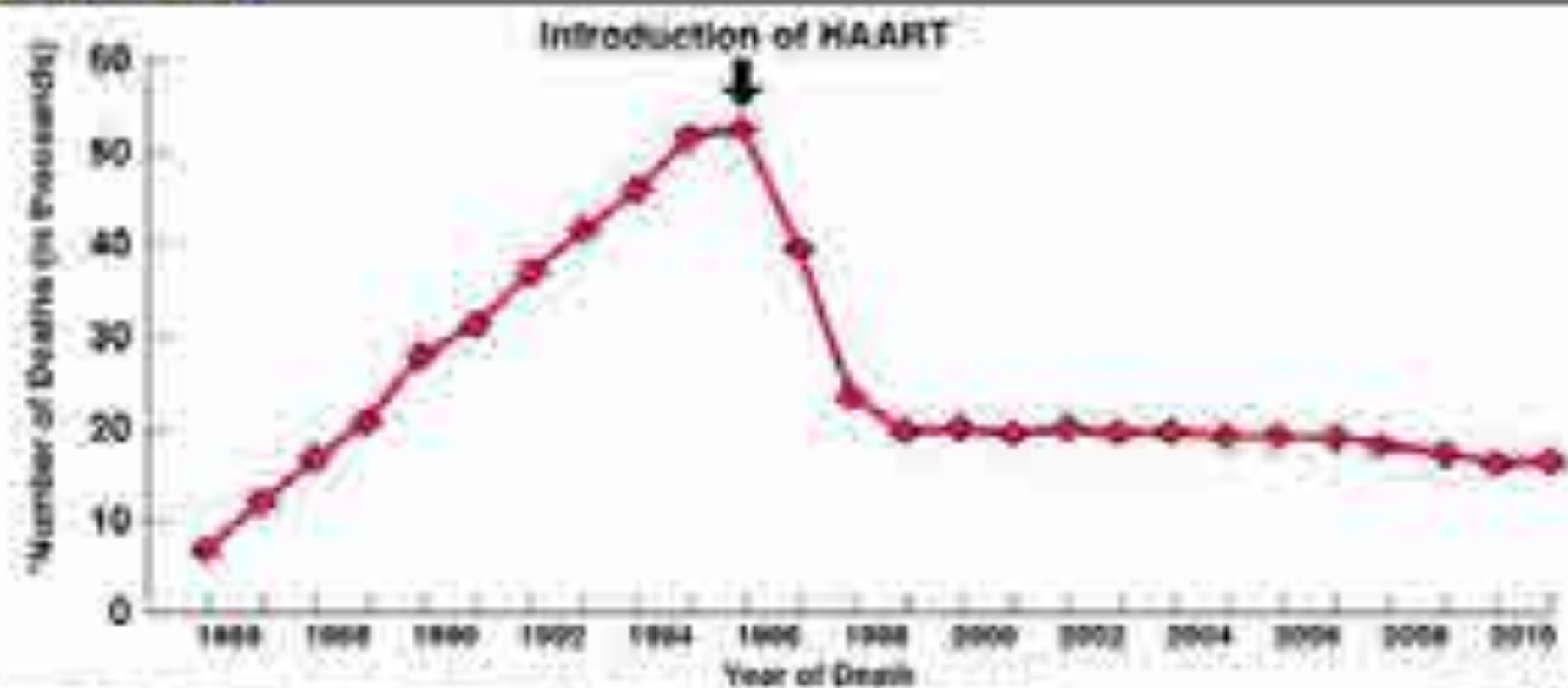
A Randomized, Double-blind Trial Comparing Combinations of Nevirapine, Didanosine, and Zidovudine for HIV-infected Patients: the INCA\$ Trial, Italy, The Netherlands, Canada and Australia Study

JJ Hammer, JH Langguth, et al

The Transformative Impact of ART



AIDS Deaths in the United States Dropped Dramatically Following Introduction of HAART



Deaths among HIV-infected individuals were reported as having AIDS in U.S. and 9 other countries.

Source: CDC, 2010

Meeting at the White House to Discuss AIDS Research, Dec. 3, 1996



Commencement Address by President Clinton at Morgan State University, Baltimore, May 18, 1997

"If America commits to find an AIDS vaccine and we enlist others in our cause, we will do it.. **Today I'm pleased to announce the National Institutes of Health will establish a new AIDS vaccine research center dedicated to this crusade."**



NIAID Vaccine Research Center



**VRC Principal Investigators
and Program Heads**

Basic Research



Clinical Trials



George W. Bush
2001-2009

“We as a rich nation have a moral obligation to help those who do not have access to HIV treatment and care because they lack the resources.”

President George W. Bush - 2002

Addressing HIV/AIDS: Visits to 4 Countries in Sub-Saharan Africa - April 2002













The White House
Office of the Press Secretary

For Immediate Release

June 19, 2002

**President Bush's International Mother
and Child HIV Prevention Initiative**

President Bush announced a new \$500 million international Mother and Child HIV Prevention Initiative that seeks to prevent the transmission of HIV/AIDS from mothers to infants and to improve health care delivery in Africa and the Caribbean. Through a combination of improving care and drug treatment and building the healthcare delivery capacity, this new effort is expected to reach up to one million women annually and reduce mother to child transmission by forty percent within five years or less in twelve African countries and the Caribbean. This initiative

Joshua B. Bolten

- **White House Deputy Chief of Staff, 1/2001-6/2003**
- **OMB Director, 6/2003-4/2006**
- **White House Chief of Staff, 4/2006-1/2009**





“Tony, the PMTCT initiative is a great start, but we need to do something on a much broader scope, something that is truly transforming. Work with Josh and put something together for us. It needs to be transforming and accountable.”

September 18, 2002

Bono Visits Tony Fauci at his home in Northwest Washington, DC



*"Tony, I am hearing rumors.
What are you up to?
Something big must be going on.
Can you tell me anything?"*

To the Rescue



Dr. Paul Farmer (Haiti)
Partners in Health



Dr. Eric Gossby (Rwanda)
Pangloss Global AIDS Foundation



Dr. Peter Muganyizi (Uganda)
Joint Clinical Research Centre



Dr. Jean (Bill) Peppé (Haiti)
Cornell GHESSCO





Michael J. Gerson

**Chief Speechwriter for President George W. Bush
Senior Advisor to the President**

State of the Union Address, January 28, 2003

- **President Bush
announces the
President's
Emergency Plan for
AIDS Relief (PEPFAR)**



The President's Emergency Plan for AIDS Relief - \$15B Over 5 Years

Goals:

- Prevent 7 million new infections
- Treat 2 million HIV-infected people
- Care for 10 million HIV-infected people, orphans and other vulnerable children



PEPFAR Supports Programs in > 50 Countries



- **Total PEPFAR Funding: > \$110 Billion**

Selected PEPFAR Program Accomplishments, December 2022

- 25 million lives saved
- 21.1 million people on antiretroviral therapy
- 5.5 million babies born HIV-free to mothers with HIV
- 64.7 million people tested for HIV
- 1.5 million people newly enrolled on PrEP to prevent HIV infection



PEPFAR
U.S. President's Emergency Plan for AIDS Relief

AIDS During the Obama Administration, 2009-2017



- **Lifting of Travel and Immigration Ban**
- **Treatment as Prevention (U=U) and PrEP Come of Age**

The New York Times

October 30, 2009

Obama Lifts a Ban on Entry Into U.S. by H.I.V.-Positive People

- **Because of the restriction, no major international conference on the AIDS epidemic has been held in the United States since 1990. Public health officials here have long said there was no scientific or medical basis for the ban.**

Transformational HIV Interventions

Treatment
as Prevention
(TasP)



Pre-Exposure
Prophylaxis
(PrEP)





The
New England
Journal of Medicine

**Prevention of
HIV-1 Infection
with Early
Antiretroviral
Therapy**

HPTN 052 Study Team

Science

**Breakthrough of
the Year: HIV
Treatment as
Prevention**

J. Cohen

HIV Pre-Exposure Prophylaxis (PrEP)



Optimal/consistent use



**~99% effective in preventing
sexual HIV acquisition**

AIDS During the Trump Administration, 2017-2021



- **Ending the HIV Epidemic Initiative**

JAMA

March 1, 2004

Volume 291
Number 9

Editorial

Ending the HIV Epidemic A Plan for the United States

AS Fauci, RR Redfield, G Sigounas, MD Weahkee, and BP Giroir

Ending the HIV Epidemic: A Plan for America

Goal:

75%
reduction
in new HIV
infections
in 5 years
and at least

90%
reduction
in 10 years.



Achieving the Goals

Diagnose

All people with HIV as early as possible after infection

Treat

People with HIV rapidly and effectively to reach sustained viral suppression

Prevent

New HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs)

Respond

Quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them



The Search for an HIV Vaccine, the Journey Continues

CW Dieffenbach and AS Fauci

“.... we must steadfastly move forward to address critical research gaps and unanswered questions.”

AIDS During the Biden Administration, 2021-Present



- **Bolstering efforts to fight HIV at home and abroad**
- **Augmenting the HIV treatment and prevention toolkits**

NATIONAL
HIV/AIDS
STRATEGY

for the United States
2022-2025



**New National
HIV/AIDS Strategy
launched Dec. 1, 2021**

"It's a plan to make sure that the latest advances in HIV prevention, diagnosis, and treatment are available to everyone, regardless of their age, race, gender identity, sexual orientation, disability, or other factors."

—President Joe Biden

Scientific Advances

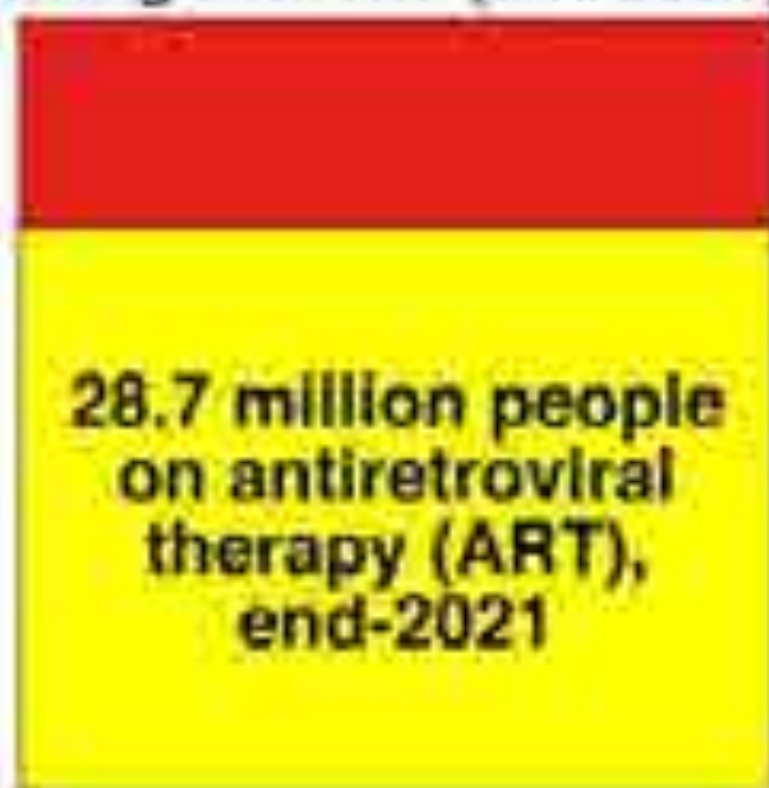
Implementation



The Global HIV Treatment Gap

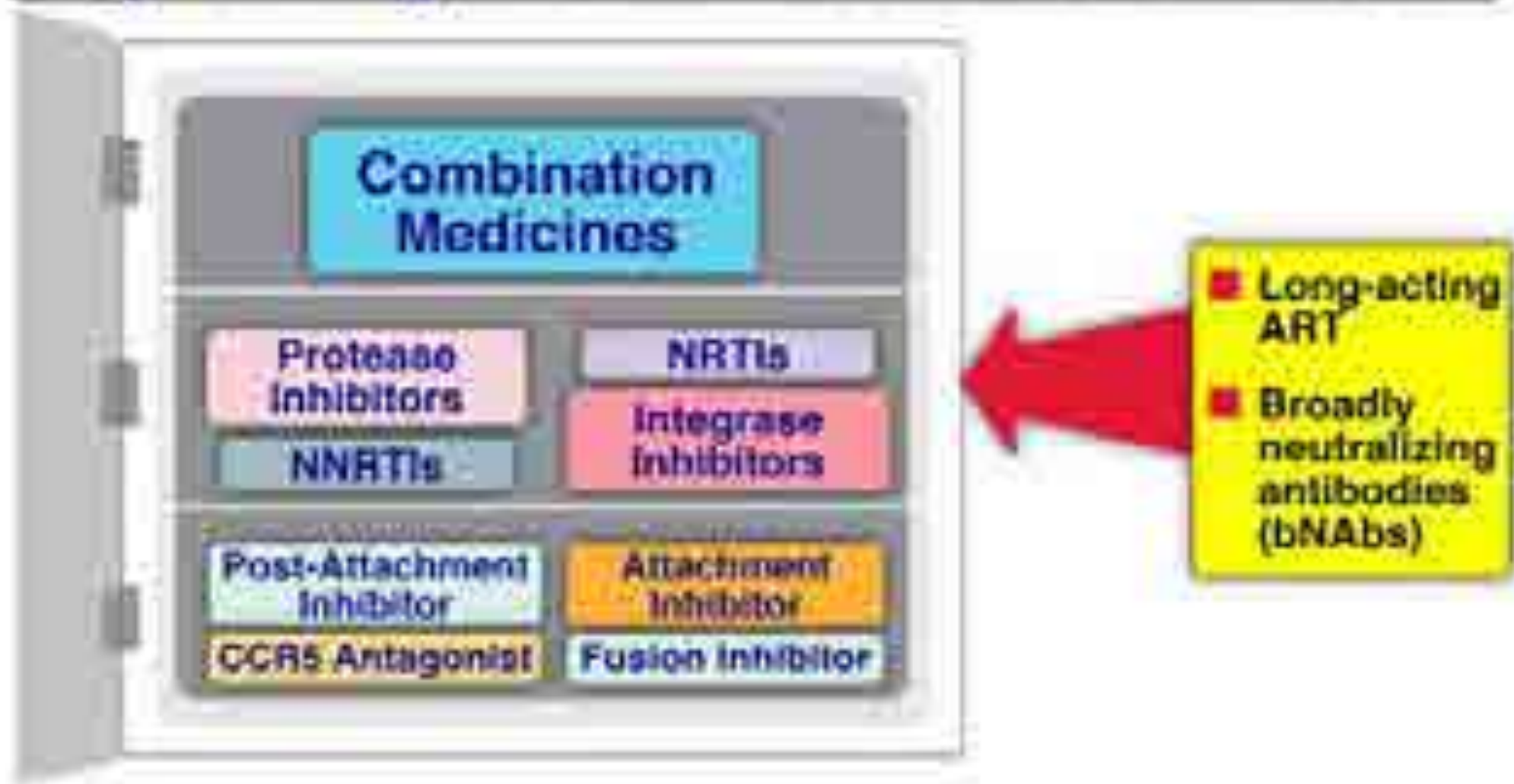
38.4 million people
living with HIV (end-2021)

**Treatment Gap:
9.7 million**



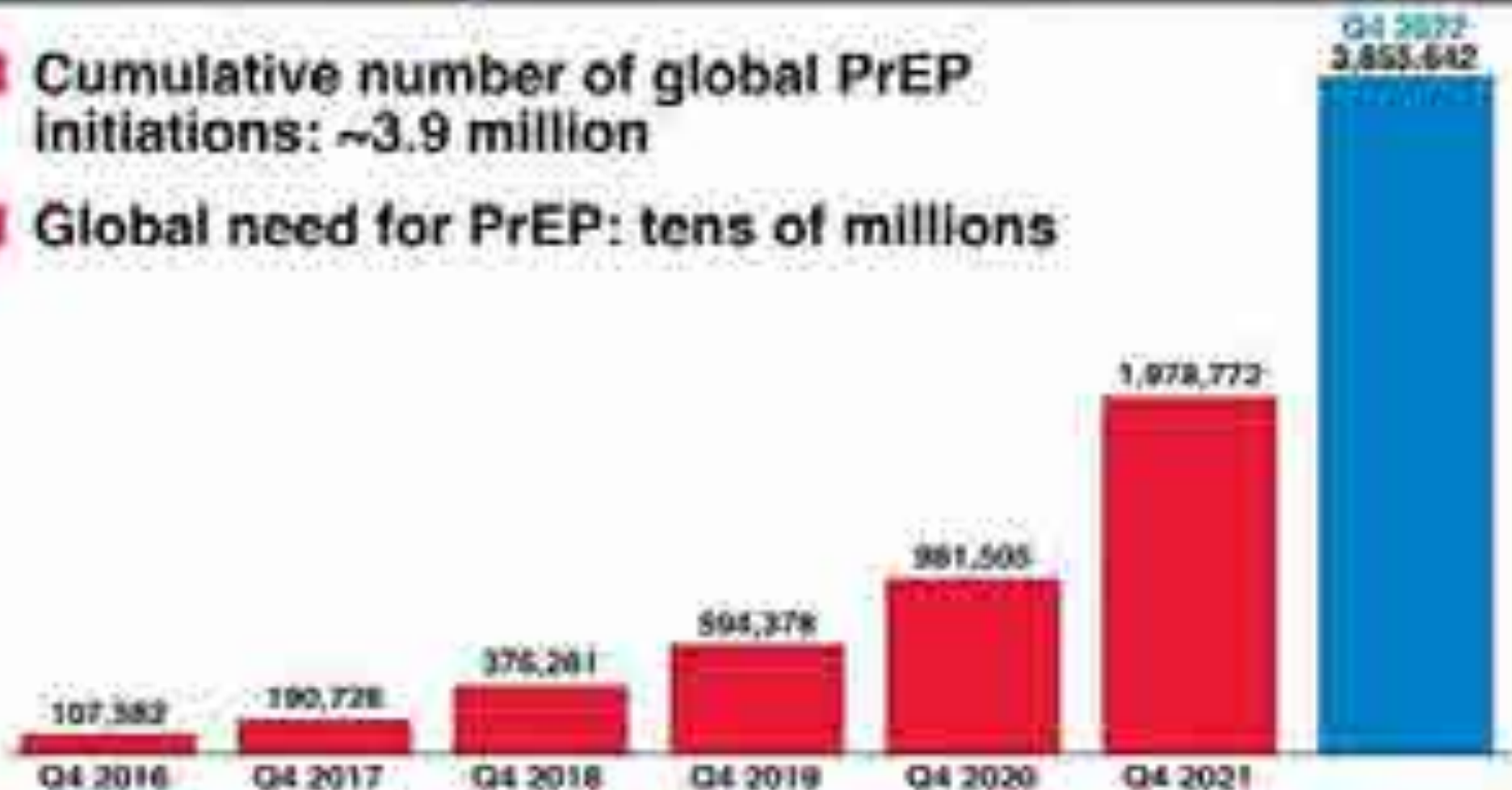
Source: UNAIDS, 7/2022

Augmenting the ART Medicine Cabinet



PrEP is Vastly Underutilized

- Cumulative number of global PrEP initiations: ~3.9 million
- Global need for PrEP: tens of millions



Source: [Data.pipreport.org](https://data.pipreport.org/) 4/2022

Augmenting the HIV Prevention Toolkit



Source: WHO Strategic Plan 2011-2015 (16-05-2012, 2015)



The
New England
Journal of Medicine

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NUMBER 25

**Ending the HIV-AIDS Pandemic –
Follow the Science**

AS Fauci & HD Marston