



A history of HIV research in South Africa: What's next?

SA HIV Clinicians Society Conference 2012

Salim S. Abdool Karim

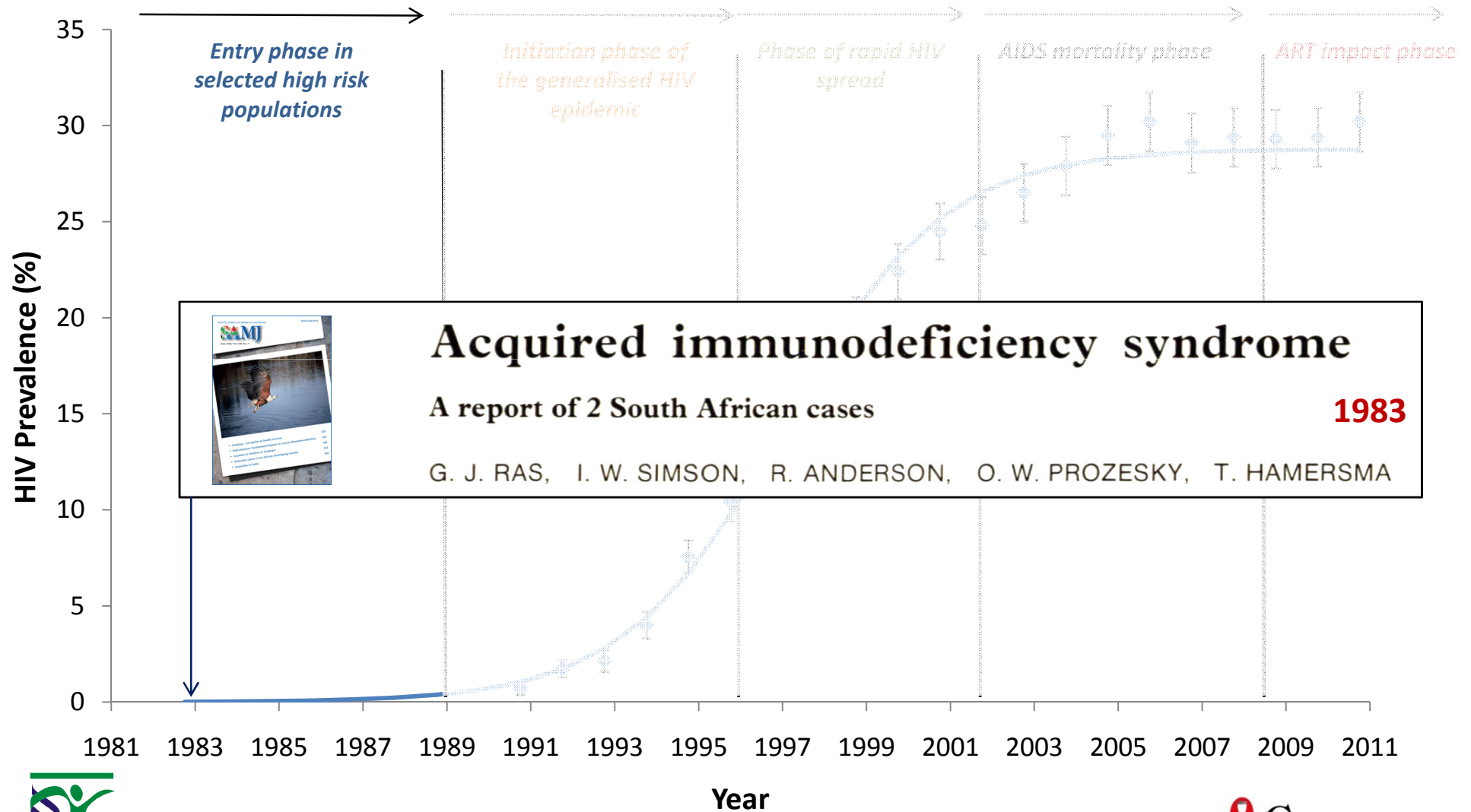
President, Medical Research Council of South Africa
Director: CAPRISA & Pro Vice-Chancellor (Research): University of KwaZulu-Natal
Professor in Clinical Epidemiology, Columbia University
Associate Member, Ragon Institute of MGH, MIT and Harvard
Adjunct Professor of Medicine, Cornell University



Overview

- **Historical phases of the HIV epidemic in South Africa**
 1. *Entry phase in selected high risk populations*
 2. *Initiation phase of the generalised HIV epidemic*
 3. *Phase of rapid HIV spread*
 4. *AIDS mortality phase*
 5. *ART impact phase*
- **Milestone events in 20 years of the HIV epidemic in SA**
- **Major South African scientific contributions in HIV**
- **What's next in HIV research in South Africa?**
- **Conclusion**

Historical phases of the HIV epidemic in SA: HIV infection among pregnant women



Phase 1: Entry phase in selected high risk populations in South Africa



Absence of HIV infection in prostitutes and women attending sexually-transmitted disease clinics in South Africa

BARRY D. SCHOUB, SUSAN F. LYONS, GILLIAN M. MCGILLIVRAY, ALAN N. SMITH, SYLVIA JOHNSON AND EPHRAIM L. FISHER

1987



AIDS and South Africa — towards a comprehensive strategy

Part I. The world-wide experience

C. B. JJSSELMUIDEN, M. H. STEINBERG, G. N. PADAYACHEE, B. D. SCHOUB, S. A. STRAUSS, E. BUCH, J. C. A. DAVIES, C. DE BEER, J. S. S. GEAR, H. S. HURWITZ

1988



Screening antenatal blood samples for anti-human immunodeficiency virus antibodies by a large-pool enzyme-linked immunosorbent assay system

Results of an 18-month investigation

M. SHAPIRO, R. L. CROOKES, E. O'SULLIVAN

1989

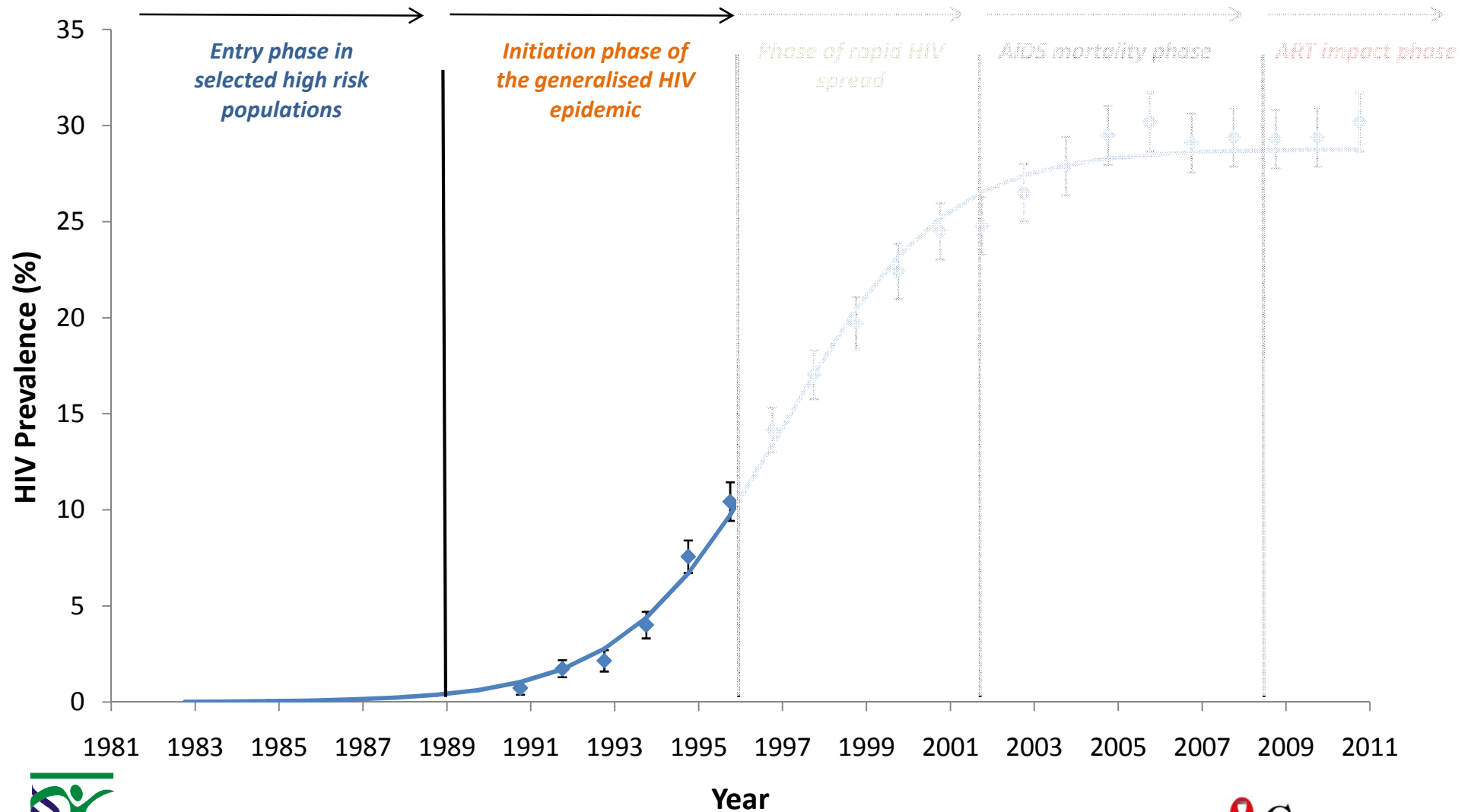


Transfusion-related human immunodeficiency virus in patients with haemophilia in Johannesburg

R. J. COHN, A. P. MACPHAIL, E. HARTMAN, R. SCHWYZER, R. SHER

1990


Historical phases of the HIV epidemic in SA: HIV infection among pregnant women



Source: Data from South African Department of Health Antenatal Surveys. www.doh.gov.za



From phase 1 to phase 2: Two independent HIV epidemics



THE LANCET

The British medical journal published a report that doctors could not give the usual advice to them, given the provisional nature of WHO's guidance and the amount of time it would take to get the results of the study. The report also said that it was not possible to give the results to patients in England.

HIV-1 subtypes in different risk groups in South Africa

**Carolyn Williamson, Susan Engelbrecht, Maureen Lambrick, Estrelita J van Rensburg, Robin Wood, Wilhelmina Bredell, Anna-Lise Williamson*

HIV prevalence in the general population 1985-1987

Year	Province	Group	N	%
1985	KwaZulu Natal	Rural community	441	0.00
1986	Transvaal	Miners	17 021	0.01
	Transvaal	Sex workers	1 200	0.00
1987	KwaZulu Natal	Antenatal women	500	0.00
		Outpatient	268	0.00

Phase 2: Initiation phase of the generalised HIV epidemic



AIDS clinic — a year on

1989

D. J. MARTIN, J. F. G. TILLEY, A. N. SMITH, B. D. SCHOUB



HIV infection in South Africa, 1982 - 1988 — a review

1989

R. SHER



Short-term predictions of the prevalence of human immunodeficiency virus infection among the black population in South Africa

1990

G. N. PADAYACHEE, R. SCHALL



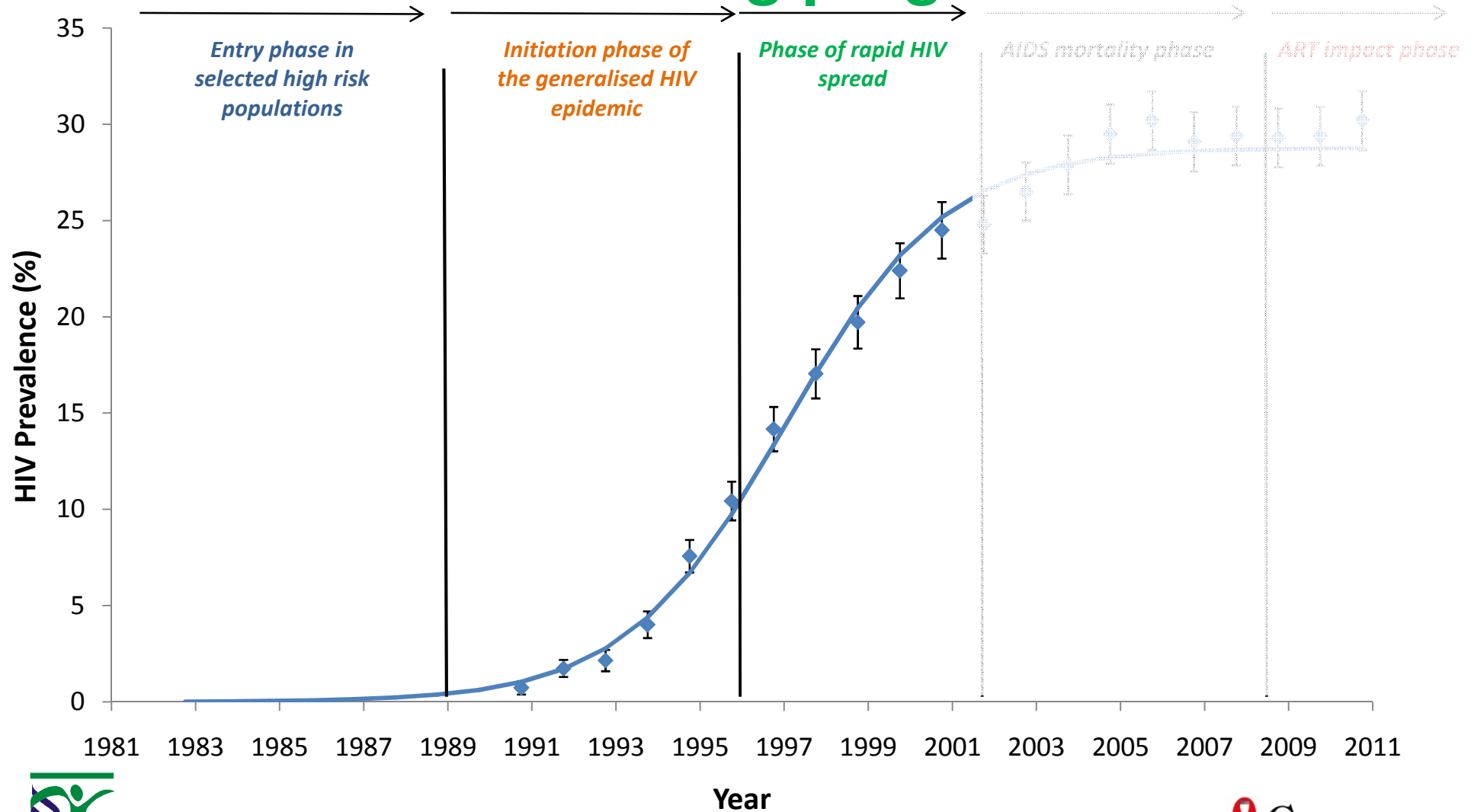
Vertically transmitted HIV-1 infection in children

A report of 23 cases

1991

I. R. FRIEDLAND, M. SNIPELISKY

Historical phases of the HIV epidemic in SA: HIV infection among pregnant women



Source: Data from South African Department of Health Antenatal Surveys. www.doh.gov.za



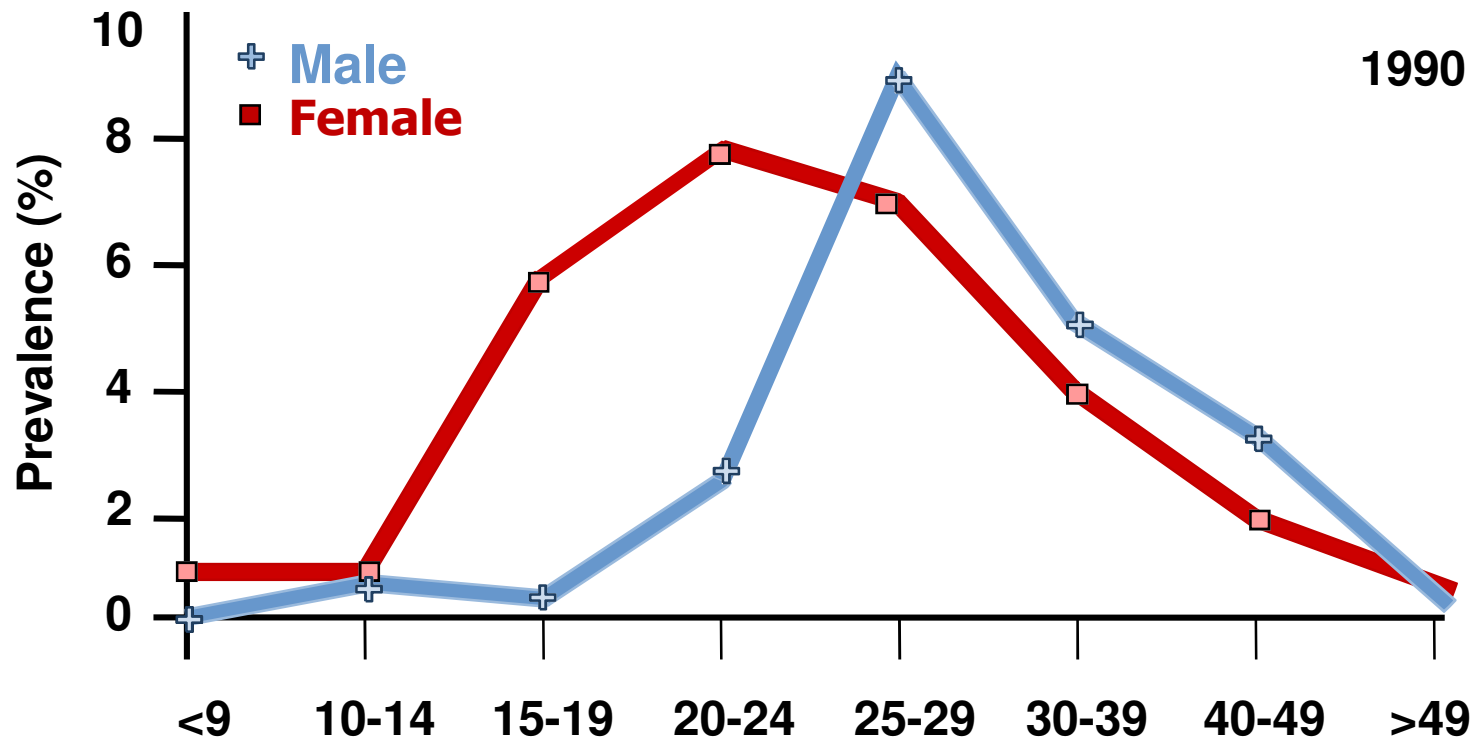
Why is HIV so severe in South Africa?



Seroprevalence of HIV infection in rural South Africa

AIDS 1992, 6:1535-1539

Quarraisha Abdool Karim, Salim S. Abdool Karim,
Bipraj Singh*, Richard Short† and Siphon Ngxongo‡



Phase 3: Phase of rapid HIV spread

Temporal trends in HIV prevalence in a rural district in South Africa

Age Group	1992	1995	1998	2001
20-24	6.9%	21.1%	39.3%	50.8%
25-29				
30-34				
35-39				



Source: Wilkinson D, Abdool Karim SS, Williams B, Gouws E. High HIV incidence and prevalence among young women in rural South Africa: developing a cohort for Intervention Trials. *J Acquir Immune Defic Syndr* 2000; 23: 405-409



Phase 3: Phase of rapid HIV spread

Temporal trends in HIV prevalence in a rural district in South Africa

Age Group	1992	1995	1998	2001
20-24	6.9%			50.8%
25-29	2.7%			47.2%
30-34	1.4%			38.4%
35-39	0.0%			36.4%



Source: Wilkinson D, Abdool Karim SS, Williams B, Gouws E. High HIV incidence and prevalence among young women in rural South Africa: developing a cohort for Intervention Trials. *J Acquir Immune Defic Syndr* 2000; 23: 405-409



Phase 3: Phase of rapid HIV spread

Temporal trends in HIV prevalence in a rural district in South Africa

Age Group	1992	1995	1998	2001
20-24	6.9%	21.1%	39.3%	50.8%
25-29	2.7%	18.8%	36.4%	47.2%
30-34	1.4%	15.0%	23.4%	38.4%
35-39	0.0%	3.4%	23.0%	36.4%



Source: Wilkinson D, Abdool Karim SS, Williams B, Gouws E. High HIV incidence and prevalence among young women in rural South Africa: developing a cohort for Intervention Trials. *J Acquir Immune Defic Syndr* 2000; 23: 405-409



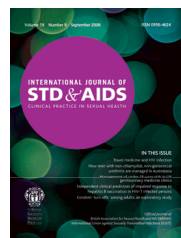
Phase 3: Phase of rapid HIV spread



High HIV Incidence and Prevalence Among Young Women in Rural South Africa: Developing a Cohort for Intervention Trials

2000

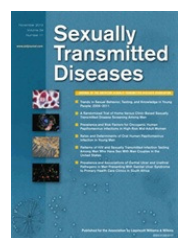
*†David Wilkinson, *S. S. Abdool Karim, ‡Brian Williams, and *Eleanor Gouws



Prevalence of HIV and HIV-related diseases in the adult medical wards of a tertiary hospital in Durban, South Africa

2001

M Colvin MS MBChB¹, S Dawood MBChB FCP², I Kleinschmidt MSc¹, S Mullick MSc MBChB³ and U Lallo MBChB MD²



Prevalence of HIV Among Truck Drivers Visiting Sex Workers in KwaZulu-Natal, South Africa

2002

GITA RAMJEE, MSc, PhD, AND ELEANOR GOUWS, MSc, MPH

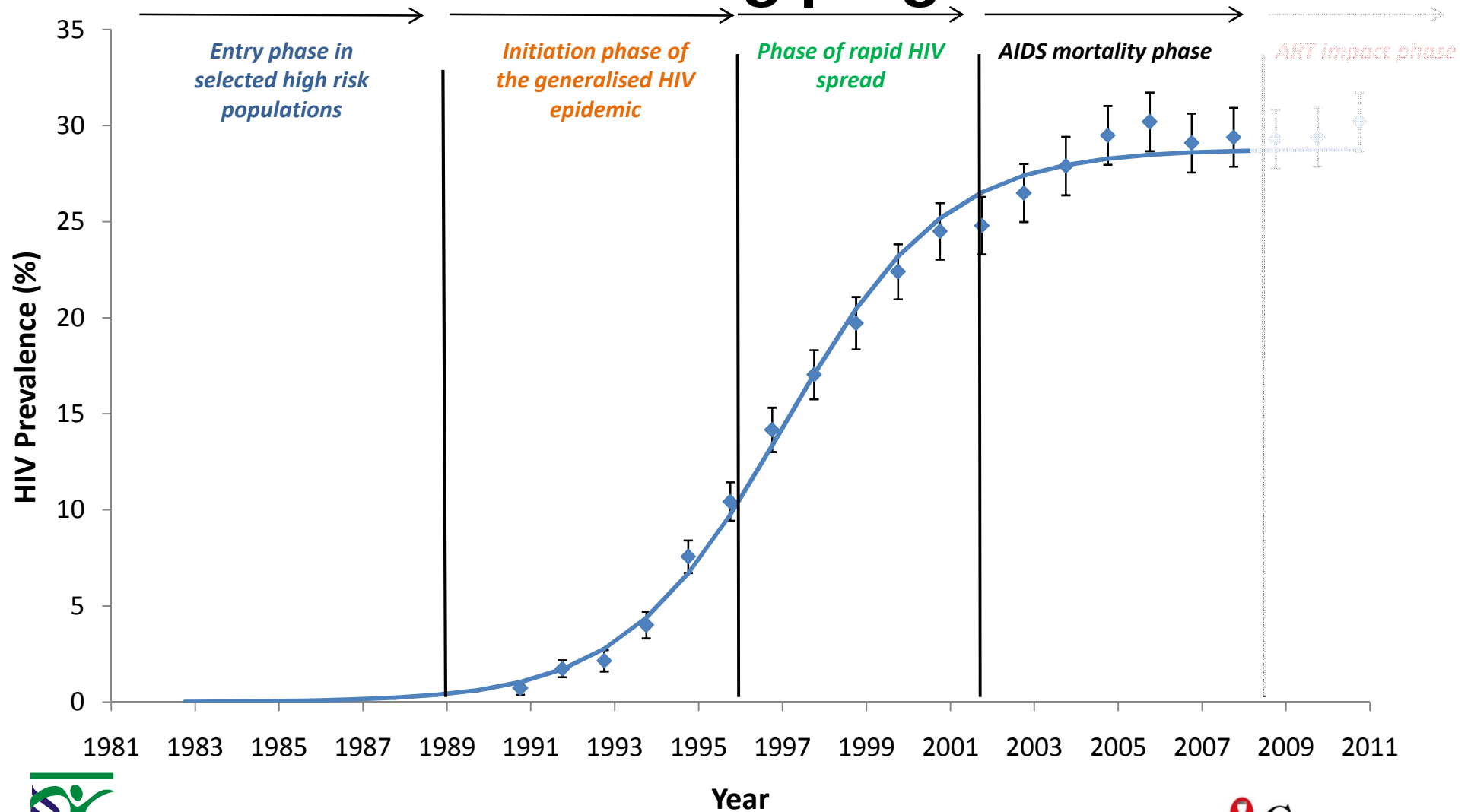


High Incidence of HIV-1 in South Africa Using a Standardized Algorithm for Recent HIV Seroconversion

2002

*Eleanor Gouws, †Brian G. Williams, ‡Haynes W. Sheppard, ‡Barryett Enge, and *Salim Abdool Karim

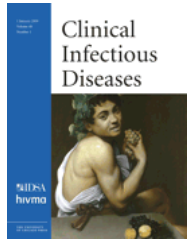
Historical phases of the HIV epidemic in SA: HIV infection among pregnant women



Source: Data from South African Department of Health Antenatal Surveys. www.doh.gov.za



Phase 4: AIDS mortality phase



Morbidity and Mortality in South African Gold Miners: Impact of Untreated Disease Due to Human Immunodeficiency Virus

2002

Elizabeth L. Corbett,¹ Gavin J. Churchyard,² Salome Charalambos,³ Badara Samb,² Vicky Moloi,³ Tim C. Clayton,¹ Alison D. Grant,¹ Jill Murray,⁴ Richard J. Hayes,¹ and Kevin M. De Cock¹



SOUTH AFRICAN CAUSE-OF-DEATH PROFILE IN TRANSITION — 1996 AND FUTURE TRENDS

2002

Debbie Bradshaw, Michelle Schneider, Rob Dorrington, David E Bourne, Ria Laubscher



High AIDS-related mortality among young women in rural KwaZulu-Natal

2007

M Mashego, D Johnson, J Frohlich, H Carrara, Q Abdool Karim



Effect of Human Immunodeficiency Virus Treatment on Maternal Mortality at a Tertiary Center in South Africa

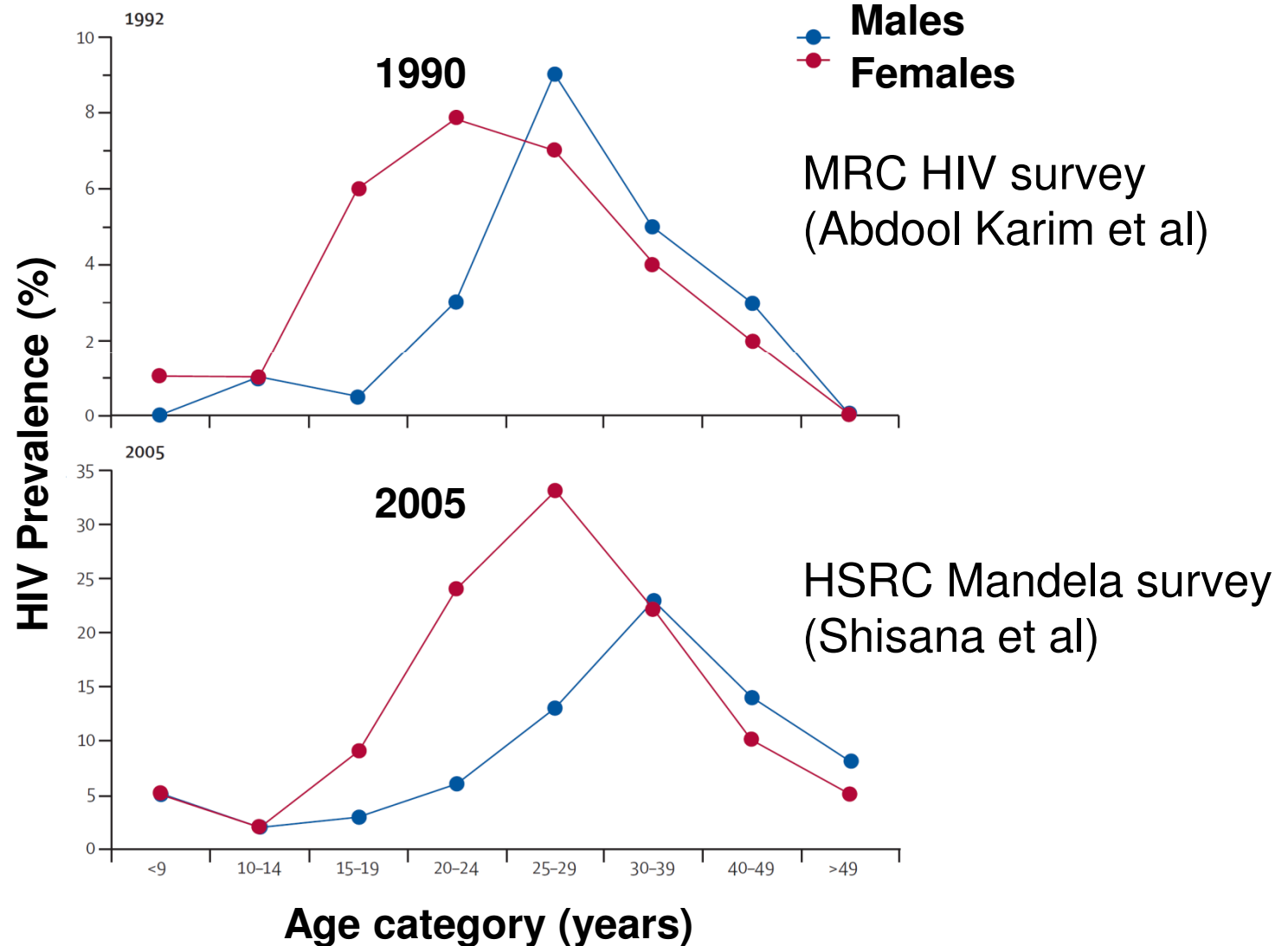
2009

A 5-Year Audit

Vivian Black, MD, Sebastian Brooke, BS, and Matthew F. Chersich, MD, PhD

Phase 4: AIDS mortality phase

Has HIV incidence changed from 1990 to 2005?



I KNOW YOU'VE ALL
BEEN WAITING A LONG
TIME FOR THIS...



AIDS
DEATHS
SINCE
1998

LAUREN 21-11-01 ZAPIRO

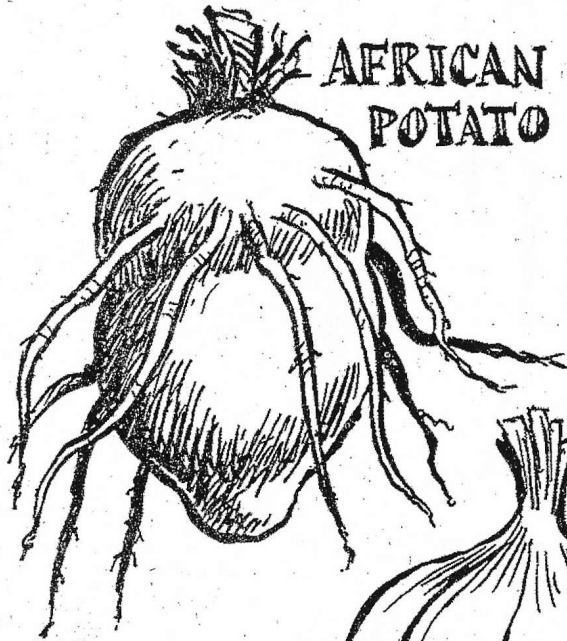
THEN WE CONCUR:
THERE IS NO CAUSAL LINK
BETWEEN HIV AND AIDS!



PRES. MBEKI'S SELECT
ADVISORY PANEL OF
INTERNATIONAL AIDS EXPERTS

hefty analogy to BEANWALL M & G 2.1.3.00 ZAPIRO ©

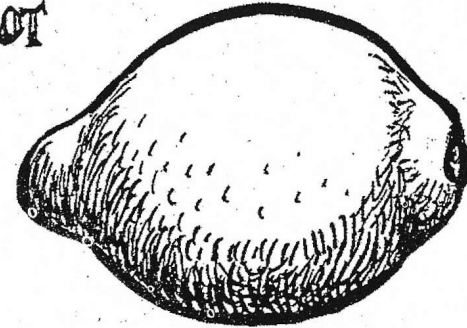
ALL THESE VEGETABLES PREVENT THE ROLLOUT
OF ANTIRETROVIRALS — TRUE OR FALSE ?



AFRICAN
POTATO



BEEETROOT



LEMON



GARLIC

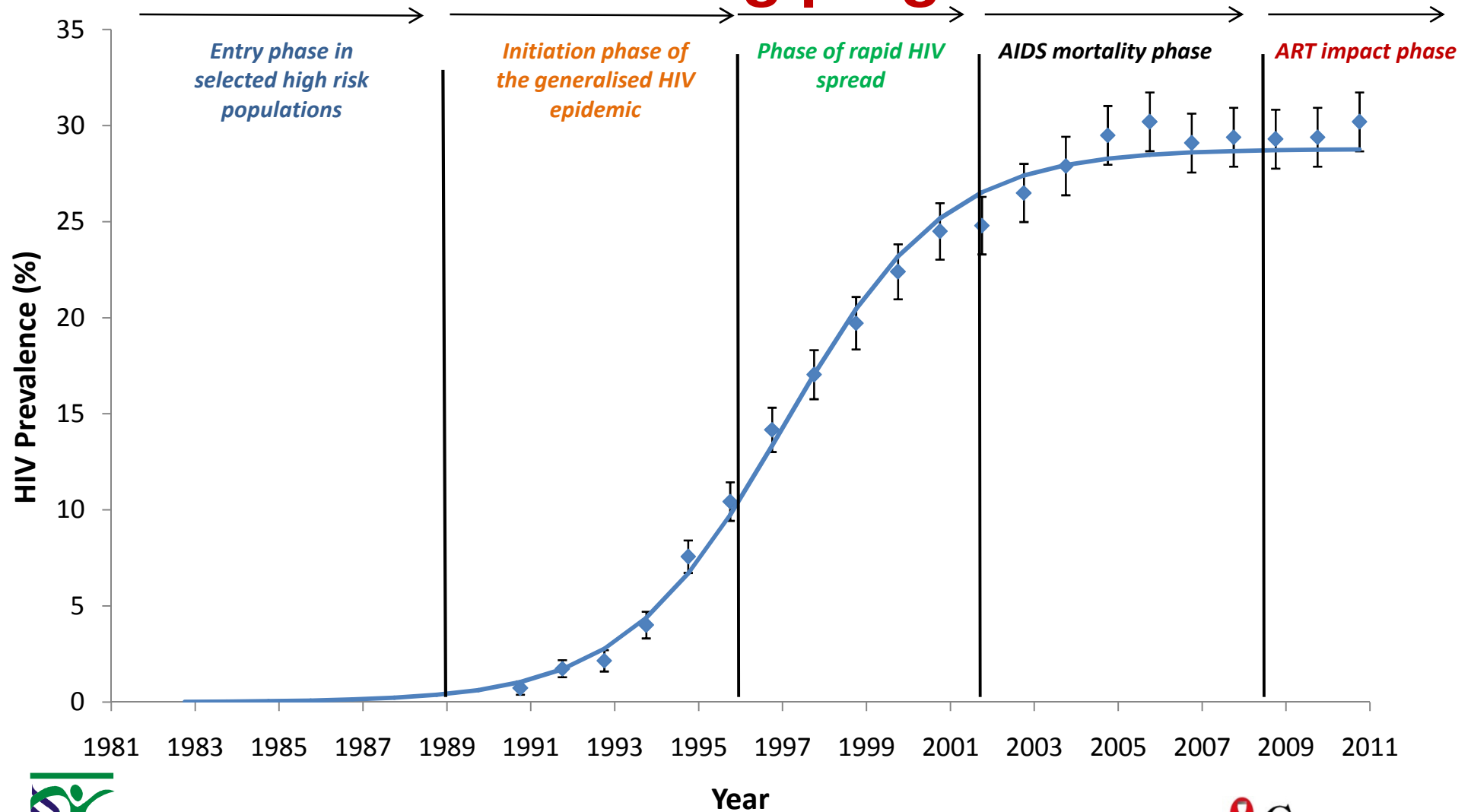


MANTO

FALSE : LEMON IS NOT A VEGETABLE .

© ZAPERO
15-2-04
SANITAGES

Historical phases of the HIV epidemic in SA: HIV infection among pregnant women



Source: Data from South African Department of Health Antenatal Surveys. www.doh.gov.za



Phase 5: ART impact phase



Changes in Pediatric HIV-Related Hospital Admissions and Mortality in Soweto, South Africa, 1996–2011: Light at the End of the Tunnel?

2011

Tammy Meyers, MD, Angela Dramowski, MD,† Helen Schneider, MD,‡ Nicolene Gardiner, MD,§ Louise Kuhn, MPH, PhD,||¶ and David Moore, MD#*

PLOS MEDICINE

HIV Treatment as Prevention: Systematic Comparison of Mathematical Models of the Potential Impact of Antiretroviral Therapy on HIV Incidence in South Africa

2012

Jeffrey W. Eaton^{1}, Leigh F. Johnson², Joshua A. Salomon³, Till Bärnighausen^{3,4}, Eran Bendavid⁵, Anna Bershteyn⁶, David E. Bloom³, Valentina Cambiano⁷, Christophe Fraser⁸, Jan A. C. Hontelez^{4,9,10}, Salal Humair^{3,11}, Daniel J. Klein⁶, Elisa F. Long¹², Andrew N. Phillips⁷, Carel Pretorius¹³, John Stover¹³, Edward A. Wenger⁶, Brian G. Williams¹⁴, Timothy B. Hallett¹*



Rates and Predictors of Failure of First-line Antiretroviral Therapy and Switch to Second-line ART in South Africa

2012

Matthew P. Fox, DSc, MPH,† Gilles Van Cutsem, MD, DTM&H, MPH,‡ Janet Giddy, MBChB, MFamMed,§ Mhairi Maskew, MBChB, MSc,|| Olivia Keiser, PhD,¶ Hans Prozesky, MD,# Robin Wood, MMed, FCP(SA), BSc, BM,** Miguel A. Hernán, MD, DrPH,††‡‡ Jonathan A. C. Sterne, PhD, MA, MSc,§§ Matthias Egger, MD, MSc, FFPHM,¶¶ and Andrew Bouille, MBChC, MSc, FCPHM(SA), PhD,||| for the IeDEA-SA collaboration*



Second-Line Antiretroviral Therapy: Long-Term Outcomes in South Africa

2011

Richard A. Murphy, MD, MPH, Henry Sunpath, MBBS, MPH,† Carmen Castilla, MD,‡ Shameez Ebrahim, BPharm,† Richard Court, MBChB,§ Hoang Nguyen, MD, MPH,|| Daniel R. Kuritzkes, MD,¶ Vincent C. Marconi, MD,# and Jean B. Nachega, MD, MPH, PhD***



Major South African scientific contributions in HIV

Major contribution = Article with a South African as first or last author AND >100 citations in Scopus

- HIV epidemiology
- Preventing mother to child transmission
- Preventing sexual transmission of HIV in men and women
- HIV pathogenesis and vaccines
- Tuberculosis and HIV co-infection
- HIV Treatment

Major contributions to understanding HIV epidemiology

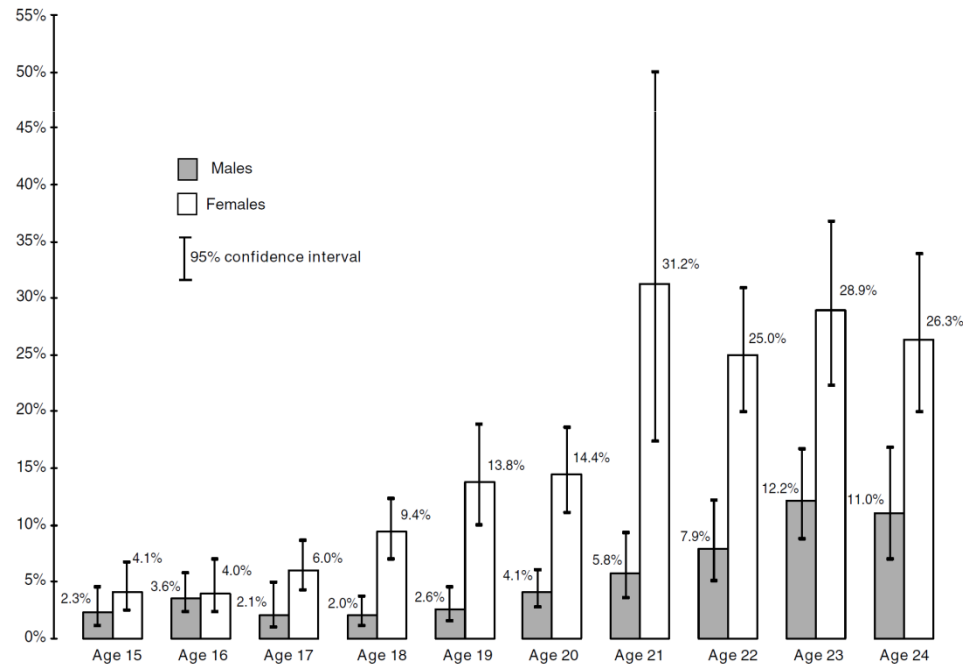


Young people's sexual health in South Africa: HIV prevalence and sexual behaviors from a nationally representative household survey

Audrey E. Pettifor^{a,b}, Helen V. Rees^a, Immo Kleinschmidt^c, Annie E. Steffenson^d, Catherine MacPhail^a, Lindiwe Hlongwa-Madikizela^a, Kerry Vermaak^e and Nancy S. Padian^{f,g}

2005

371 citations



HIV prevalence by age and sex among 15–24 year olds, South Africa, 2003.

HIV epidemiology



HIV infection among youth in a South African mining town is associated with herpes simplex virus-2 seropositivity and sexual behaviour

Bertran Auvert^{a,b}, Ron Ballard^c, Catherine Campbell^d, Michel Caraël^e,
Matthieu Carton^a, Glenda Fehler^c, Eleanor Gouws^f,
Catherine MacPhail^g, Dirk Taljaard^g, Johannes Van Dam^h and
Brian Williams^g

2001

114 citations



Unsafe sexual behaviour in South African youth

Liberty Eaton^{a,*}, Alan J. Flisher^a, Leif E. Aarø^b

2003

163 citations



The Impact of Migration on HIV-1 Transmission in South Africa

A Study of Migrant and Nonmigrant Men and Their Partners

MARK N. LURIE, PhD,^{*,†} BRIAN G. WILLIAMS, PhD,[‡] KHANGELANI ZUMA, MA,^{*,§} DAVID MKAYA-MWAMBURI, MD,^{*}
GEOFF P. GARNETT, PhD,^{||} ADRIAAN W. STURM, MD,^{††} MICHAEL D. SWEAT, PhD,[#]
JOEL GITTELSOHN, PhD,[#] AND SALIM S. ABDOOL KARIM, MDChB, PhD^{**††}

2003

145 citations



Who infects whom? HIV-1 concordance and discordance among migrant and non-migrant couples in South Africa

Mark N. Lurie^{a,b}, Brian G. Williams^c, Khangelani Zuma^{a,d},
David Mkaya-Mwamburi^a, Geoff P. Garnett^e, Michael D. Sweat^f,
Joel Gittelsohn^f and Salim S. Abdool Karim^g

2003

111 citations



HIV/AIDS epidemiology, pathogenesis, prevention, and treatment

Viviana Simon, David D Ho, Quarraisha Abdool Karim

2006

126 citations

Major contributions to the prevention of mother to child transmission



Influence of infant-feeding patterns on early mother-to-child transmission of HIV-1 in Durban, South Africa: a prospective cohort study

*Anna Coutsooudis, Kubendran Pillay, Elizabeth Spooner, Louise Kuhn, Hoosen M Coovadia, for the South African Vitamin A Study Group**

1999

371 citations



Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa

*Anna Coutsooudis^a, Kubendran Pillay^a, Louise Kuhn^b, Elizabeth Spooner^a, Wei-Yann Tsai^c and Hoosen M. Coovadia^a, for the South African Vitamin A Study Group**

2001

232 citations



Mother-to-child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study

Hoosen M Coovadia, Nigel C Rollins, Ruth M Bland, Kirsty Little, Anna Coutsooudis, Michael L Bennish, Marie-Louise Newell

2007

248 citations

Preventing mother to child transmission



The Effects of Vitamin A Supplementation on the Morbidity of Children Born to HIV-Infected Women

Anna Coutsooudis, PhD, Raziya A. Bobat, MBChB, Hoosen M. Coovadia, MD, Louise Kuhn, PhD, Wei-Yann Tsai, PhD, and Zena A. Stein, MBChB

1995
116 citations



Randomized trial testing the effect of vitamin A supplementation on pregnancy outcomes and ear mother-to-child HIV-1 transmission in Durban, South Africa

Anna Coutsooudis, Kubendran Pillay, Elizabeth Spooner, Louise Kuhn^a and Hoosen M. Coovadia for the South African Vitamin A Study Group^b

1999
142 citations



Pharmacokinetics and Antiretroviral Activity of Lamivudine Alone or When Coadministered with Zidovudine in Human Immunodeficiency Virus Type 1–Infected Pregnant Women and Their Offspring

J. Moodley, D. Moodley, K. Pillay, H. Coovadia, J. Saba, R. van Leeuwen, C. Goodwin, P. R. Harrigan, K. H. P. Moore, C. Stone, R. Plumb, and M. A. Johnson

Departments of Obstetrics and Paediatrics, University of Natal, Durban, South Africa; Joint United Nations Programme on HIV/AIDS, Geneva, Switzerland; National AIDS Therapy Evaluation Centre, Amsterdam, The Netherlands; Glaxo-Wellcome Research and Development, Ltd., Greenford, United Kingdom; British Columbia Centre for Excellence in HIV/AIDS, Vancouver, Canada

2002
120 citations



A Multicenter Randomized Controlled Trial of Nevirapine Versus a Combination of Zidovudine and Lamivudine to Reduce Intrapartum and Early Postpartum Mother-to-Child Transmission of Human Immunodeficiency Virus Type 1

Dhayendre Moodley,¹ Jagidesa Moodley,¹ Hoosen Coovadia,¹ Glenda Gray,² James McIntyre,² Justus Hofmyer,³ Cheryl Nikodem,³ David Hall,⁵ Maria Gigliotti,⁵ Patrick Robinson,⁵ Lynette Boshoff,⁴ and John L. Sullivan,⁶ for the South African Intrapartum Nevirapine Trial (SAINT) Investigators

2003
202 citations

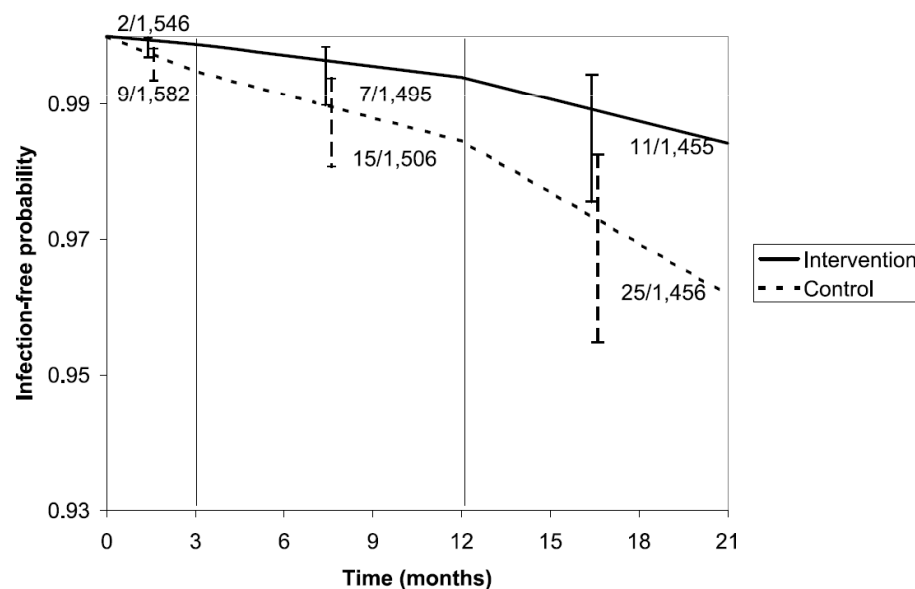
Major contributions to the prevention of sexual transmission in men

PLOS MEDICINE

Randomized, Controlled Intervention Trial
of Male Circumcision for Reduction of HIV
Infection Risk: The ANRS 1265 Trial

2005
728 citations

Bertran Auvert^{1,2,3,4*}, Dirk Taljaard⁵, Emmanuel Lagarde^{2,4}, Joëlle Sobngwi-Tambekou², Rémi Sitta^{2,4}, Adrian Puren⁶



Infection-Free Probability As a Function of
Time and of Randomization



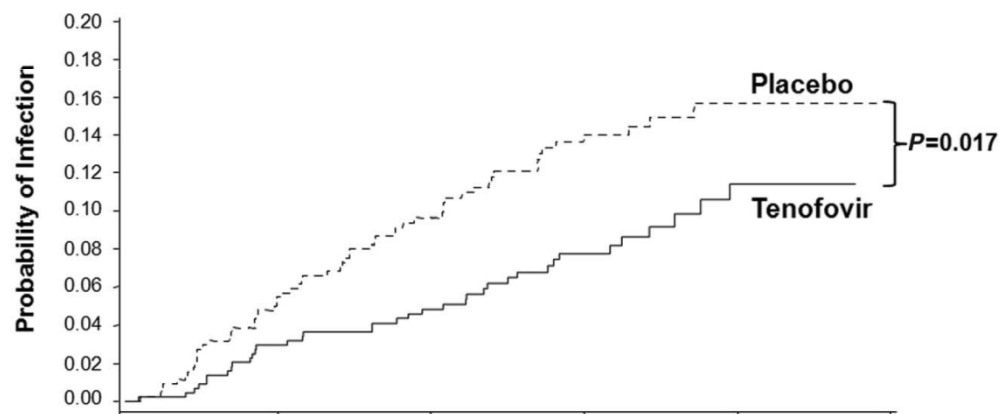
Major contributions to the prevention of sexual transmission in women



Effectiveness and Safety of Tenofovir Gel, an Antiretroviral Microbicide, for the Prevention of HIV Infection in Women

2010
569 citations

Quarraisha Abdoal Karim,^{1,2,*†} Salim S. Abdoal Karim,^{1,2,3,*} Janet A. Frohlich,¹ Anneke C. Grobler,¹ Cheryl Baxter,¹ Leila E. Mansoor,¹ Ayesha B. M. Kharsany,¹ Sengeziwe Sibeko,¹ Koleka P. Mlisana,¹ Zaheen Omar,¹ Tanuja N. Gengiah,¹ Silvia Maarschalk,¹ Natasha Arulappan,¹ Mukelisiwe Mlotshwa,¹ Lynn Morris,⁴ Douglas Taylor,⁵ on behalf of the CAPRISA 004 Trial Group†



Months of follow-up	6	12	18	24	30
Cumulative HIV endpoints	37	65	88	97	98
Cumulative women-years	432	833	1143	1305	1341
HIV incidence rates (Tenofovir vs Placebo)	6.0 vs 11.2	5.2 vs 10.5	5.3 vs 10.2	5.6 vs 10.2	5.6 vs 9.1
Effectiveness (P-value)	47% (0.064)	50% (0.007)	47% (0.004)	40% (0.013)	39% (0.017)

Prevention of sexual transmission



Reducing the Risk of HIV Infection among South African Sex Workers: Socioeconomic and Gender Barriers

Quarraisha Abdool Karim, MS, HED, Salim S. Abdool Karim, FFCH(SA), MMed(CH), MS, DipData, Kate Soldan, MS, and Martin Zondi

1995
101 citations



'I think condoms are good but, aai, I hate those things': condom use among adolescents and young people in a Southern African township

Catherine MacPhail^{a,}, Catherine Campbell^b*

2001
204 citations



Condom use, power and HIV/AIDS risk: sex-workers bargain for survival in Hillbrow/Joubert Park/Berea, Johannesburg

Janet Maia Wojcicki, Josephine Malala*

2001
109 citations

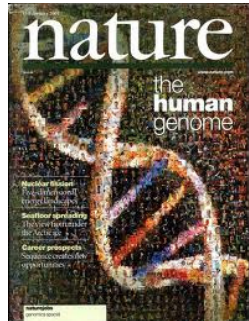


Peer education, gender and the development of critical consciousness: participatory HIV prevention by South African youth

Catherine Campbell^{a,}, Catherine MacPhail^b*

2002
121 citations

Major contributions to HIV pathogenesis and vaccine research

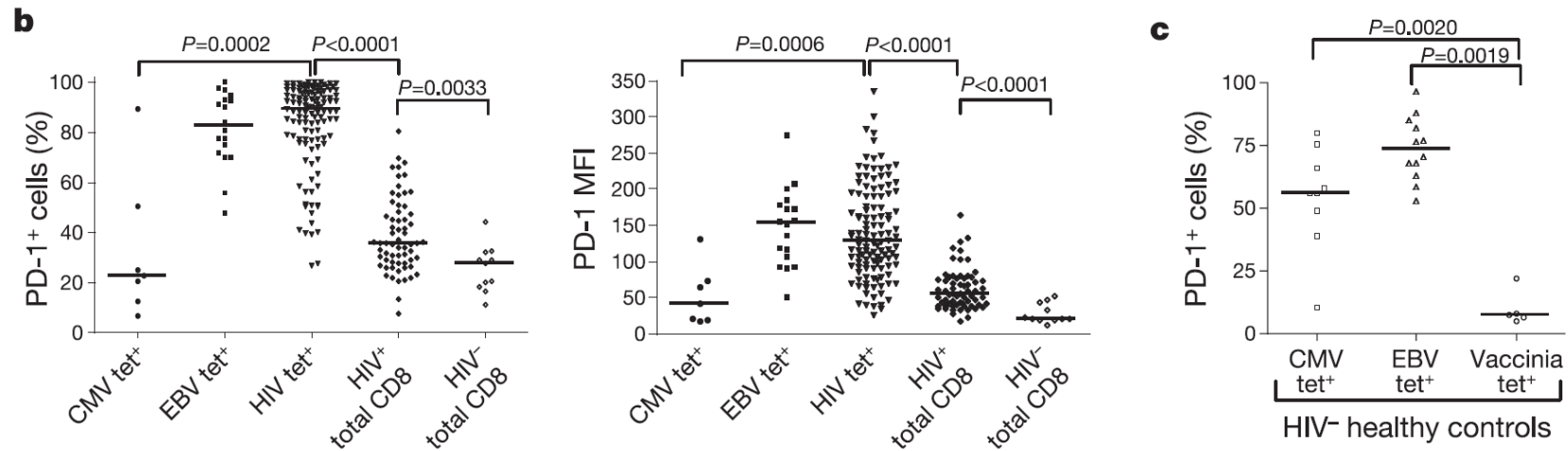


PD-1 expression on HIV-specific T cells is associated with T-cell exhaustion and disease progression

Cheryl L. Day^{1,2,3*}, Daniel E. Kaufmann^{2*}, Photini Kiepiela¹, Julia A. Brown⁴, Eshia S. Moodley¹, Sharon Reddy¹, Elizabeth W. Mackey², Joseph D. Miller⁵, Alasdair J. Leslie³, Chantal DePierres¹, Zenele Mncube¹, Jaikumar Duraiswamy⁵, Baogong Zhu⁴, Quentin Eichbaum², Marcus Altfeld², E. John Wherry⁶, Hoosen M. Coovadia¹, Philip J. R. Goulder^{1,2,3}, Paul Klenerman³, Rafi Ahmed⁵, Gordon J. Freeman⁴ & Bruce D. Walker^{1,2,7}

2006

772 citations



PD-1 is upregulated on HIV specific CD8 T cells

HIV pathogenesis and vaccines



The CCR5 and CXCR4 Coreceptors Are Both Used by Human Immunodeficiency Virus Type 1 Primary Isolates from Subtype C

Tonie Cilliers,¹ Jabulani Nhlapo,¹ Mia Coetzer,¹ Dragana Orlovic,² Thomas Ketas,³ William C. Olson,³ John P. Moore,⁴ Alexandra Trkola,⁵ and Lynn Morris^{1*}

2003
101 citations



Dominant influence of HLA-B in mediating the potential co-evolution of HIV and HLA

Photini Kiepiela¹, Alasdair J. Leslie², Isobella Honeyborne^{1,2}, Danni Ramduth¹, Christina Thobakgale¹, Senica Chetty¹, Prinisha Rathnavalu¹, Corey Moore³, Katja J. Pfafferott¹, Louise Hilton², Peter Zimbwa², Sarah Moore¹, Todd Allen⁵, Christian Brander⁵, Marylyn M. Addo⁵, Marcus Altfeld⁴, Ian James³, Simon Mallat³, Michael Bunce⁶, Linda D. Barber⁷, James Szinger⁸, Cheryl Day¹, Paul Klenerman², James Mullins⁴, Bette Korber⁸, Hoosen M. Coovadia¹, Bruce D. Walker^{1,5,9} & Philip J. R. Goulder^{1,2,5}

2004
353 citations



Nature of Nonfunctional Envelope Proteins on the Surface of Human Immunodeficiency Virus Type 1

Penny L. Moore,^{1,2} Emma T. Crooks,¹ Lauren Porter,³ Ping Zhu,³ Charmagne S. Cayanan,^{4†} Henry Grise,³ Paul Corcoran,¹ Michael B. Zwick,⁴ Michael Franti,⁵ Lynn Morris,² Kenneth H. Roux,³ Dennis R. Burton,⁴ and James M. Binley^{1,4*}

2006
114 citations



CD8⁺ T-cell responses to different HIV proteins have discordant associations with viral load

Photini Kiepiela¹, Kholiswa Ngumbela¹, Christina Thobakgale¹, Dhanwanthi Ramduth¹, Isobella Honeyborne², Eshia Moodley¹, Shabashini Reddy¹, Chantal de Pierres¹, Zenele Mncube¹, Nompumelelo Mkhwanazi¹, Karen Bishop¹, Mary van der Stok¹, Kriebashnie Nair¹, Nasreen Khan¹, Hayley Crawford², Rebecca Payne², Alasdair Leslie², Julia Prado², Andrew Prendergast², John Frater², Noel McCarthy³, Christian Brander⁴, Gerald H Learn⁵, David Nickle⁵, Christine Rousseau⁵, Hoosen Coovadia¹, James I Mullins⁵, David Heckerman⁶, Bruce D Walker^{1,4,7} & Philip Goulder^{1,2,4}

2007
361 citations



Neutralizing Antibody Responses in Acute Human Immunodeficiency Virus Type 1 Subtype C Infection[▽]

E. S. Gray,^{1†} P. L. Moore,^{1†} I. A. Choge,¹ J. M. Decker,² F. Bibollet-Ruche,² H. Li,² N. Leseaka,¹ F. Treurnicht,³ K. Mlisana,⁴ G. M. Shaw,² S. S. Abdool Karim,⁴ C. Williamson,³ L. Morris,^{1*} and the CAPRISA 002 Study Team

2007
122 citations

Major contributions to HIV and TB co-infection

THE LANCET

"For British men with advanced prostate cancer there remains hope that abiraterone might be available to them, given the provisional nature of NICE's guidance and the annual £206-million cancer drug fund that is available for such treatments for patients in England."

Effect of highly active antiretroviral therapy on incidence of tuberculosis in South Africa: a cohort study

Motasim Badri, Douglas Wilson, Robin Wood

2002

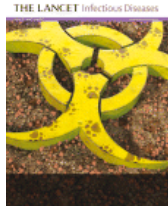
332 citations

	HAART			Non-HAART		
	Number of cases of tuberculosis	Patient-years	Incidence*	Number of cases of tuberculosis	Patient-years	Incidence*
Overall	9	375.1	2.4	82	848.2	9.7
CD4 count (cells/μL)						
<200	5	148	3.4	41	235	17.5
200–350	2	121.2	1.7	27	225	12.0
>350	2	100.1	2.0	14	388.3	3.6
WHO stage						
1 or 2	1	219	0.5	36	657.4	5.5
3 or 4	8	172.75	4.6	46	190.8	24.1
Socioeconomic status						
Low	6	166.21	3.6	65	514.34	10.9
High	3	208.89	1.44	17	333.86	5.09

HAART=highly active antiretroviral therapy. *Per 100 patient-years.

Tuberculosis incidence and cases averted, stratified by baseline CD4 count, WHO stage, and socioeconomic status

HIV and TB co-infection



Immune reconstitution disease associated with mycobacterial infections in HIV-infected individuals receiving antiretrovirals

Stephen D Lawn, Linda-Gail Bekker, Robert F Miller

2005
316 citations



Tuberculosis among HIV-infected patients receive HAART: long term incidence and risk factors in a South African cohort

Stephen D. Lawn^{a,b}, Motasim Badri^a and Robin Wood^a

2005
139 citations



Burden of tuberculosis in an antiretroviral treatment programme in sub-Saharan Africa: impact on treatment outcomes and implications for tuberculosis control

Stephen D. Lawn^{a,c}, Landon Myer^{b,d}, Linda-Gail Bekker^a and Robin Wood^a

2006
176 citations



Undiagnosed Tuberculosis in a Community with High HIV Prevalence

Implications for Tuberculosis Control

Robin Wood, Keren Middelkoop, Landon Myer, Alison D. Grant, Andrew Whitelaw, Stephen D. Lawn,

2007
103 citations



Timing of Initiation of Antiretroviral Drugs during Tuberculosis Therapy

Salim S. Abdool Karim, M.B., Ch.B., Ph.D., Kogieleum Naidoo, M.B., Ch.B., Anneke Grobler, M.Sc., Nesri Padayatchi, M.B., Ch.B., Cheryl Baxter, M.Sc., Andrew Gray, M.Sc. (Pharm.), Tanuja Gengiah, M.Clin.Pharm., M.S. (Epi.), Gonasagrie Nair, M.B., Ch.B., Sheila Bamber, M.B., Ch.B., Aarthi Singh, M.B., Ch.B., Munira Khan, M.B., Ch.B., Jacqueline Pienaar, M.Sc., Wafaa El-Sadr, M.D., M.P.H., Gerald Friedland, M.D., and Quarraisha Abdool Karim, Ph.D.

2010
177 citations

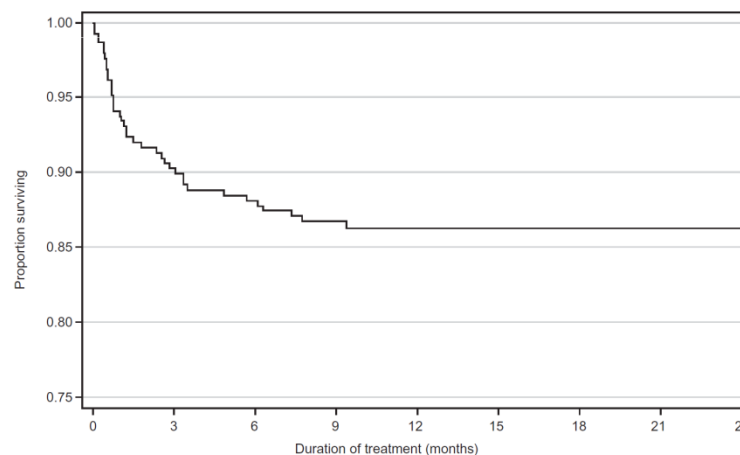
Major contributions to HIV treatment



Outcomes after two years of providing antiretroviral treatment in Khayelitsha, South Africa

David Coetzee^a, Katherine Hildebrand^a, Andrew Boulle^a, Gary Maartens^b, Francoise Louis^c, Veliswa Labatala^c, Hermann Reuter^c, Nonhutuzelo Ntwana^c and Eric Goemaere^c

2004
351 citations



	287	257	251	219	168	123	74	54	34
Number at risk	287	257	251	219	168	123	74	54	34
All deaths		27	6	4	1	0	0	0	0
Lost to follow-up		1	0	0	0	0	0	0	0
Stopped attending (alive 31/07/03)		0	0	0	0	0	3	0	0
Transferred to another service		2	0	0	1	0	0	0	0
In care but not on ART		3	7	4	3	3	2	2	0
On second-line regimen		0	0	1	1	5	3	3	3
Percentage surviving		90.2	88.1	86.7	86.3	86.3	86.3	86.3	86.3
95% confidence interval		86.2-91.4	83.8-90.1	82.2-89.8	81.7-89.8	81.7-89.8	81.7-89.8	81.7-89.8	81.7-89.8

Survival of adults on antiretroviral treatment

HIV treatment



Early mortality among adults accessing a community-based antiretroviral service in South Africa: implications for programme design

Stephen D. Lawn^{a,c}, Landon Myer^{a,b,d}, Catherine Orrell^a, Linda-Gail Bekker^a and Robin Wood^a

2005
201 citations



Patient Retention in Antiretroviral Therapy Programs in Sub-Saharan Africa: A Systematic Review

Sydney Rosen^{1,2*}, Matthew P. Fox¹, Christopher J. Gill^{1,3}

2007
271 citations



The NEW ENGLAND JOURNAL of MEDICINE

Early Antiretroviral Therapy and Mortality among HIV-Infected Infants

Avy Violari, F.C.Paed., Mark F. Cotton, M.Med., Ph.D., Diana M. Gibb, M.D., Abdel G. Babiker, Ph.D., Jan Steyn, M.Sc., Shabir A. Madhi, F.C.Paed., Ph.D., Patrick Jean-Philippe, M.D., and James A. McIntyre, F.R.C.O.G., for the CHER Study Team*

2008
321 citations

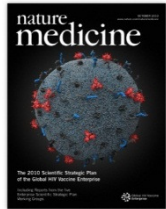


Early mortality among adults accessing antiretroviral treatment programmes in sub-Saharan Africa

Stephen D. Lawn^{a,b}, Anthony D. Harries^{b,c,d}, Xavier Anglaret^{e,f}, Landon Myer^{g,h} and Robin Wood^a

2008
222 citations

What's next in HIV research in South Africa?



Evolution of an HIV glycan-dependent broadly neutralizing antibody epitope through immune escape

Penny L. Moore^{1,2}, Elin S. Gray¹, Constantinos Kurt Wibmer^{1,2}, Jinal N. Bhiman^{1,2}, Molati Nonyane¹, Daniel J. Sheward³, Tandile Hermanus¹, Shringkhala Bajimaya⁴, Nancy L. Tumba¹, Melissa-Rose Abrahams², Bronwen E. Lambson¹, Nthabeleng Ranchobe¹, Lihua Ping⁵, Nobubelo Ngandu³, Quarraisha Abdool Karim⁶, Salim S. Abdool Karim⁶, Ronald I. Swanstrom⁵, Michael S. Seaman⁴, Carolyn Williamson² and Lynn Morris^{1,2*}

nature
medicine



Evaluation of the Effectiveness of the National Prevention of Mother-to-Child Transmission (PMTCT) Programme on Infant HIV measured at Six Weeks Postpartum in South Africa

Ameena Goga, Thu-Ha Dinh, Debra Jackson et al



FACTS 001: A Phase III, Multi-Centre, Randomised Controlled Trial to Assess the Safety and Effectiveness of the Vaginal Microbicide 1% Tenofovir Gel in the Prevention of Human Immunodeficiency Virus Type 1 Infection in Young Women, and to Examine Effects of the Microbicide on the Incidence of Herpes Simplex Virus Type 2 Infection

Helen Rees, Glenda Gray et al.



Effect of ART coverage on rate of new HIV infections in a hyper-endemic, rural population: South Africa

Frank Tanser, Till Bärnighausen, Erofilo Grapsa and Marie-Louise Newell



Converting Science into Policy

HIV prevention successes: 2010 - 2012

- **HIV testing campaign:** 13million HIV tests in 2010/1
- **Condoms:** 492m male condoms in 2010 (↑ by 30% in 5yrs)
- **Medical Male circumcision:** 250,000 in 2011
↑ 50-fold from 5190 circumcisions in 2008
- **Preventing mother-to-child transmission:**
 - 98% of women receive HIV test during pregnancy
 - 92% of HIV+ mothers receive ART prophylaxis
 - Vertical transmission rate in 2011 = 2.7%



Source: Mayosi BM, Lawn JE, van Niekerk A, Bradshaw D, Abdool Karim SS, Coovadia H. Health in South Africa. Lancet 2012 (in press)



South Africa's laudable achievements:

Deaths are lower & people are living longer than 5 years ago - due to AIDS treatment

- 1. Deaths in children <5yrs: ↓ 43%**
(42 per 1000 live births in 2011)
- 2. Adults deaths: ↓ 20%** (40% premature deaths in 2011)
- 3. Life expectancy: ↑ by 6 years** (60 years in 2011)



Source: Bradshaw D, Dorrington R, Laubscher R. Rapid Mortality Surveillance Report 2011. Medical Research Council, August 2012



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Thanks to all those patients, participants, advocates and research teams that have made South Africa a powerhouse of AIDS research globally