

LECTURE SERIES

“HIV: PENULARAN DAN PENCEGAHAN”

PUSAT PENELITIAN HIV/AIDS

UNIKA ATMA JAYA

Speaker: dr. Alegra Wolter



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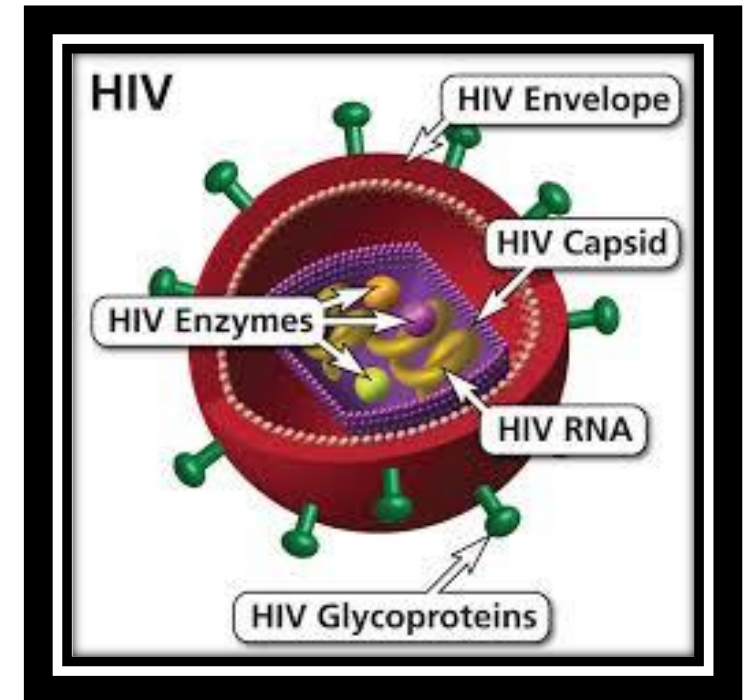
Myth?

- Saya bisa ketularan kalau bergaul / tinggal bareng ODHA ?
- HIV/AIDS adalah penyakit gay dan pemakai narkoba?
- HIV bisa nular lewat gigitan nyamuk?
- HIV = Hukuman mati, ga bisa disembuhkan?
- Ibu hamil positif akan selalu menularkan HIV pada janin

What is HIV?

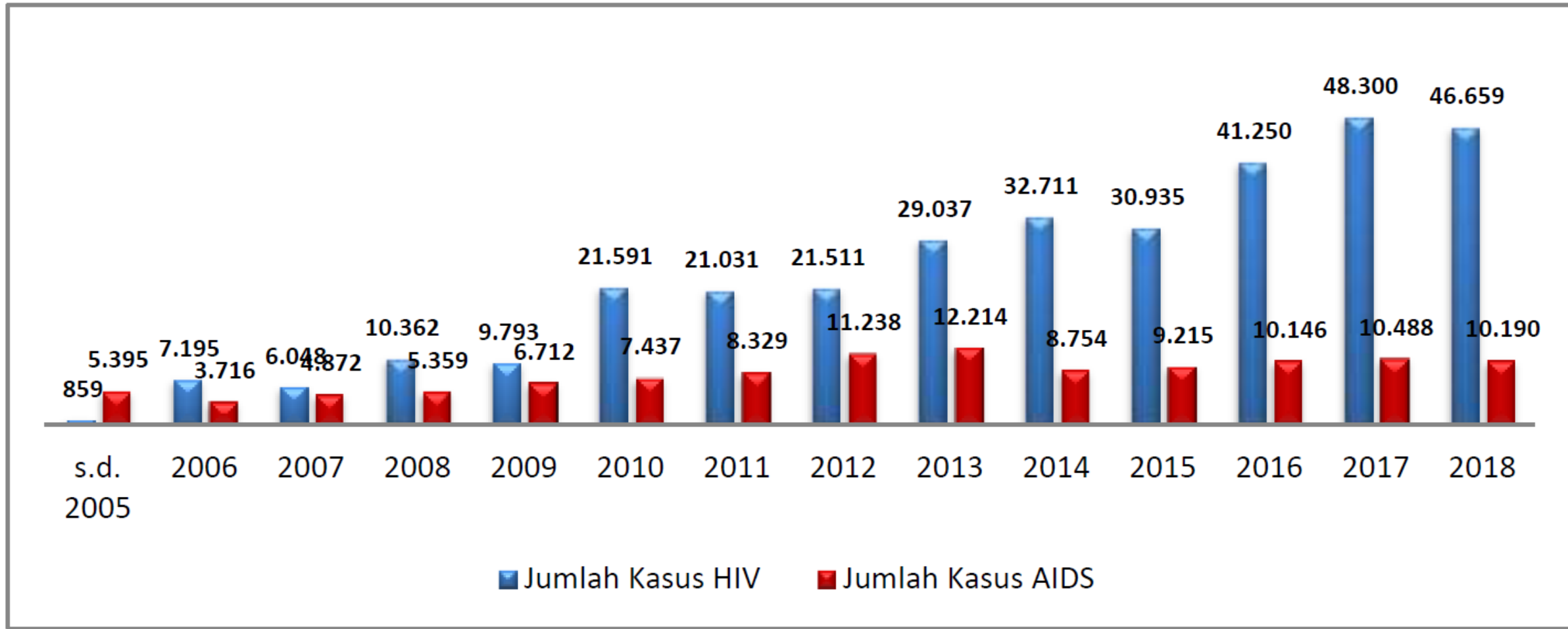


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Epidemiology (1)

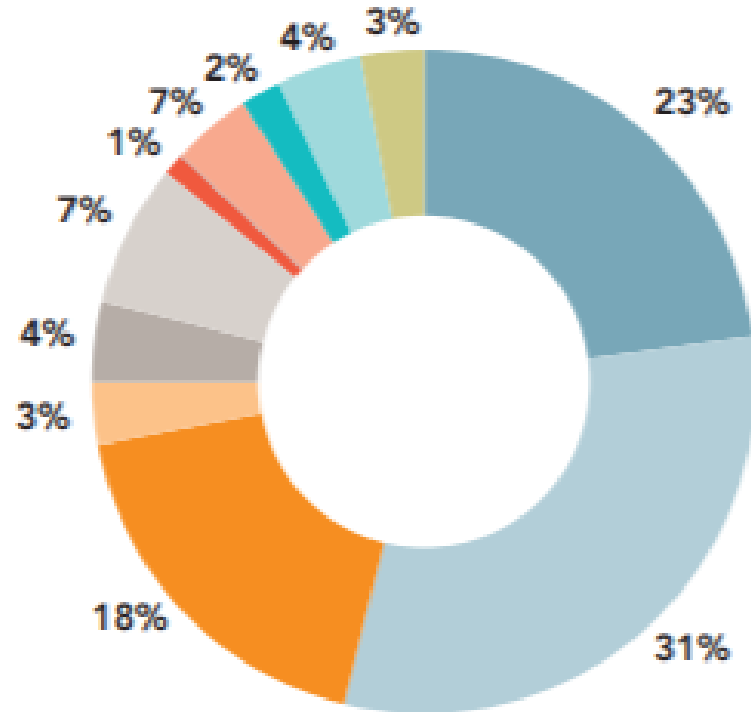
Grafik1. Jumlah HIV dan AIDS yang Dilaporkan per Tahun sd Desember 2018



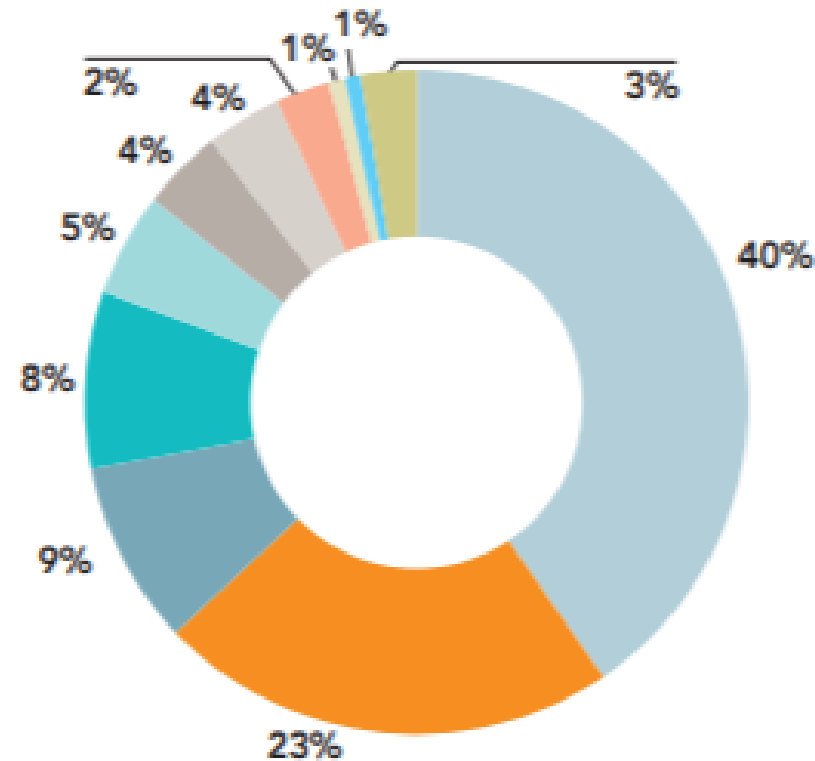
*Jumlah AIDS yang dilaporkan mengalami perubahan karena adanya validasi data bersama Dinkes Provinsi pada November 2018

Distribution of new HIV infections and AIDS-related deaths by country, Asia and the Pacific, 2017

NEW HIV INFECTIONS



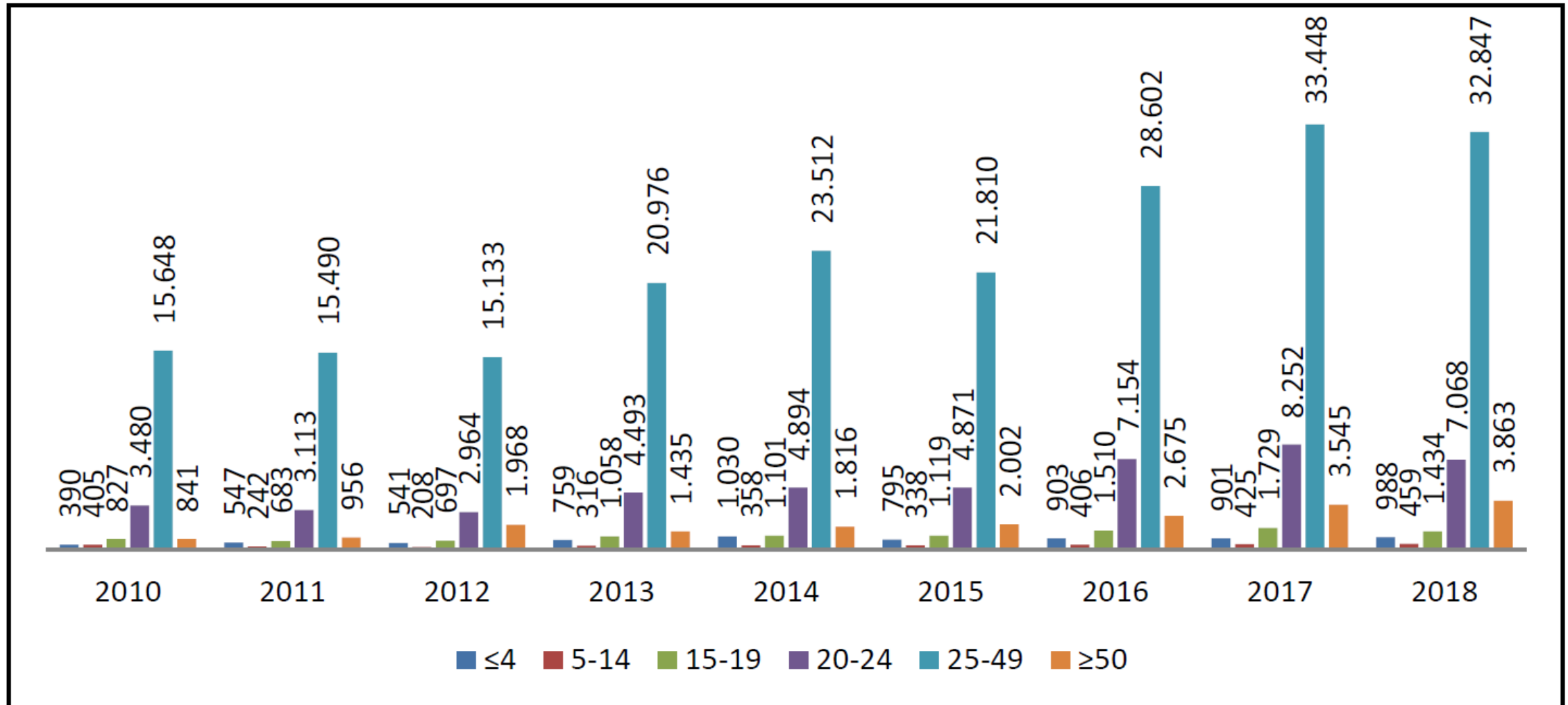
AIDS-RELATED DEATHS



Cambodia China India Indonesia Malaysia Myanmar
Nepal Pakistan Papua New Guinea Philippines Thailand
Viet Nam Rest of the region

Epidemiology (2)

**Grafik 3. Jumlah Infeksi HIV yang Dilaporkan Menurut Kelompok Umur
Tahun 2010–2018**



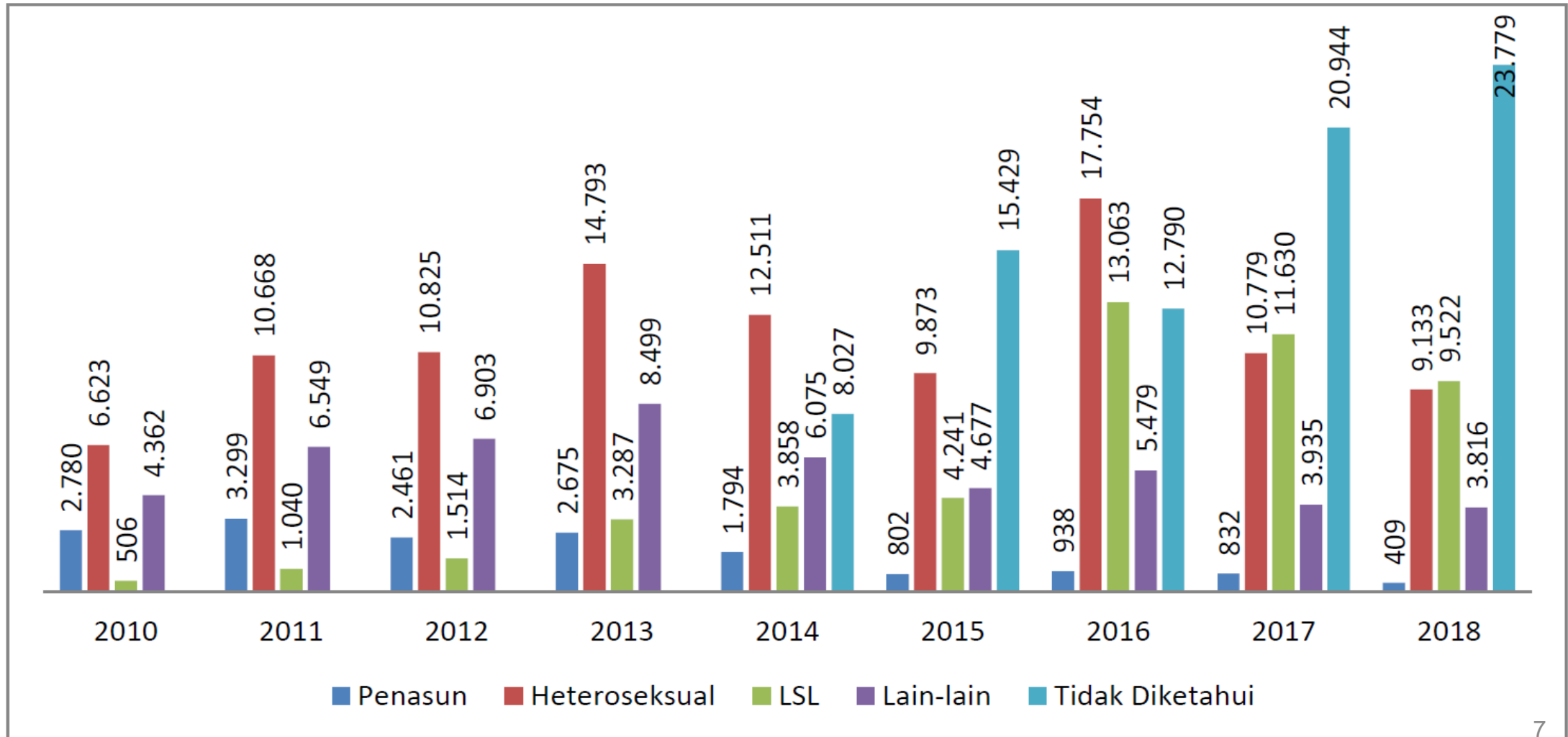
*Laporan Melalui SIHA per 17 Januari 2019

Epidemiology (3)



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**Grafik 5. Jumlah Infeksi HIV yang Dilaporkan Menurut Faktor Risiko
Tahun 2010–2018**



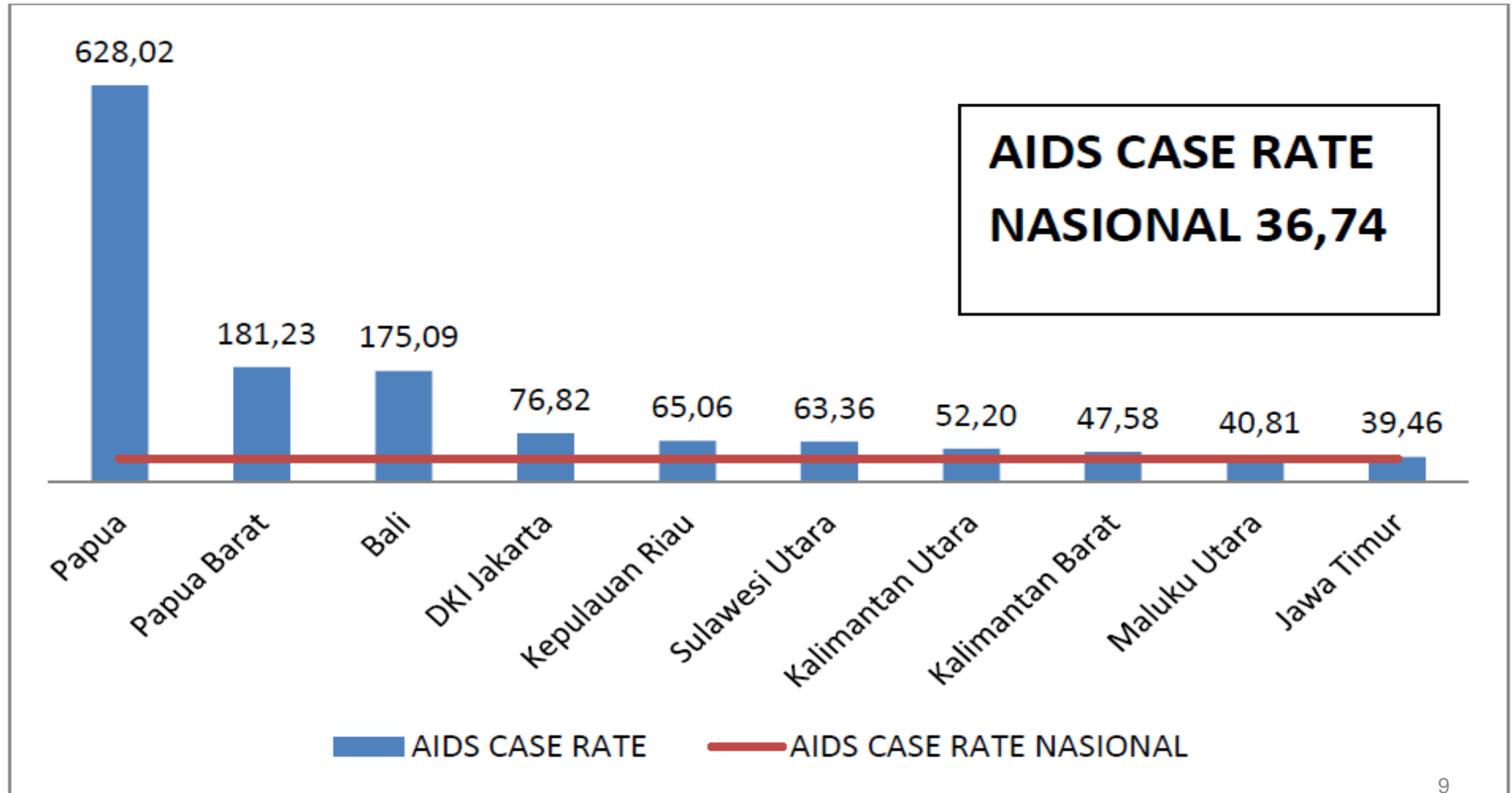
Tabel 5. Jumlah Infeksi HIV yang Dilaporkan Provinsi sampai dengan Desember 2018

No	Provinsi	Tahun										Jumlah
		sd 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
1	NAD	2	26	31	26	46	60	48	70	111	155	575
2	Sumatera Utara	2.429	1.347	1.251	1.337	1.603	1.628	1.491	1.891	1.914	1.999	16.890
3	Sumatera Barat	224	212	132	133	222	321	243	396	563	624	3.070
4	Riau	231	337	439	314	412	550	586	822	711	539	4.941
5	Jambi	40	86	105	203	208	170	148	215	278	246	1.699
6	Sumatera Selatan	478	226	265	230	262	252	265	346	486	508	3.318
7	Bengkulu	29	55	33	40	79	92	87	115	95	107	732
8	Lampung	27	93	295	335	189	256	345	381	580	524	3.025
9	Bangka Belitung	12	85	103	132	97	113	147	135	268	205	1.297
10	Kep. Riau	767	743	674	792	926	973	885	1.037	1.105	1.033	8.935
11	DKI Jakarta	9.801	5.186	4.012	3.926	5.865	5.851	4.695	6.019	6.626	6.896	58.877
12	Jawa Barat	2.777	1.535	1.429	1.416	3.041	3.740	3.741	5.466	5.819	5.185	34.149
13	Jawa Tengah	1.481	993	1.057	1.110	2.322	2.867	3.005	4.032	5.425	5.400	27.692
14	DI Yogyakarta	798	310	310	272	489	614	531	736	723	833	5.616
15	Jawa Timur	4.504	2.731	2.715	2.912	3.391	4.508	4.155	6.513	8.204	8.608	48.241
16	Banten	1.449	400	433	395	502	680	649	1.092	1.315	1.334	8.249
17	Bali	1.447	1.628	1.557	1.737	1.690	2.129	2.028	2.367	2.441	2.211	19.235
18	NTB	205	93	132	110	170	149	194	175	222	192	1.642
19	NTT	379	360	352	242	259	249	299	487	837	842	4.306
20	Kalimantan Barat	2.003	643	499	465	525	699	456	525	608	692	7.115
21	Kalimantan Tengah	-	21	68	46	57	113	134	141	119	122	821
22	Kalimantan Selatan	-	21	83	88	174	227	250	454	572	297	2.166
23	Kalimantan Timur	519	392	429	392	467	539	504	813	1.202	1.126	6.383
24	Kalimantan Utara	-	-	-	-	-	-	84	163	172	166	585
25	Sulawesi Utara	1.159	186	222	212	264	392	311	409	516	555	4.226
26	Sulawesi Tengah	-	38	37	86	147	131	138	157	200	292	1.226
27	Sulawesi Selatan	1.145	692	611	524	792	839	700	993	1.366	1.174	8.836
28	Sulawesi Tenggara	-	6	49	71	100	160	129	134	134	106	889
29	Gorontalo	-	6	11	8	26	24	24	7	51	74	231
30	Sulawesi Barat	-	21	5	7	-	30	13	22	37	26	161
31	Maluku	-	216	440	295	236	414	409	621	688	462	3.781
32	Maluku Utara	-	14	46	92	54	63	45	120	145	200	779
33	Papua Barat	615	390	356	535	448	600	702	530	409	380	4.965
34	Papua	1.736	2.499	2.850	3.028	3.974	3.278	3.494	3.866	4.358	3.546	32.629
	Nasional	34.257	21.591	21.031	21.511	29.037	32.711	30.935	41.250	48.300	46.659	327.282

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*Laporan Melalui SIHA per 17 Januari 2019

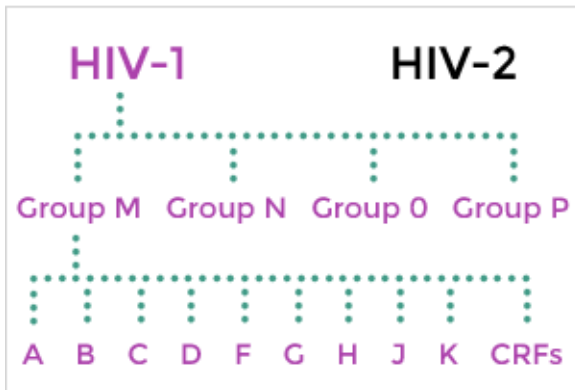
Grafik 12. Sepuluh Provinsi dengan AIDS Case Rate Tertinggi Sampai dengan Desember 2018



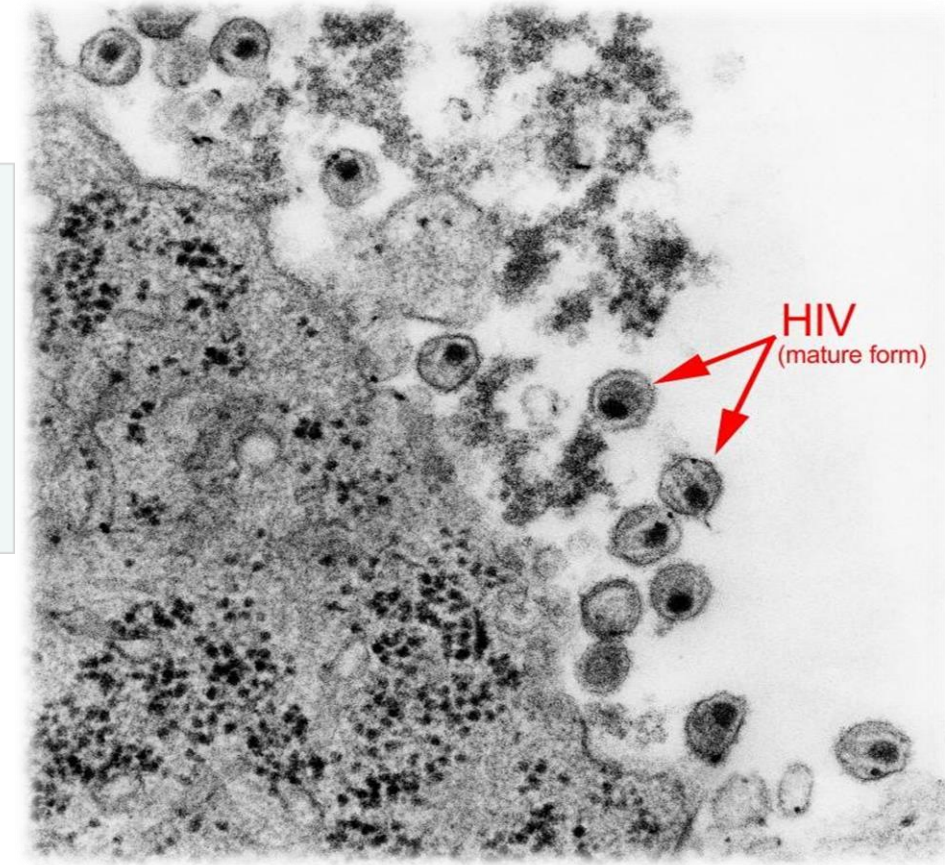
HIV Strains

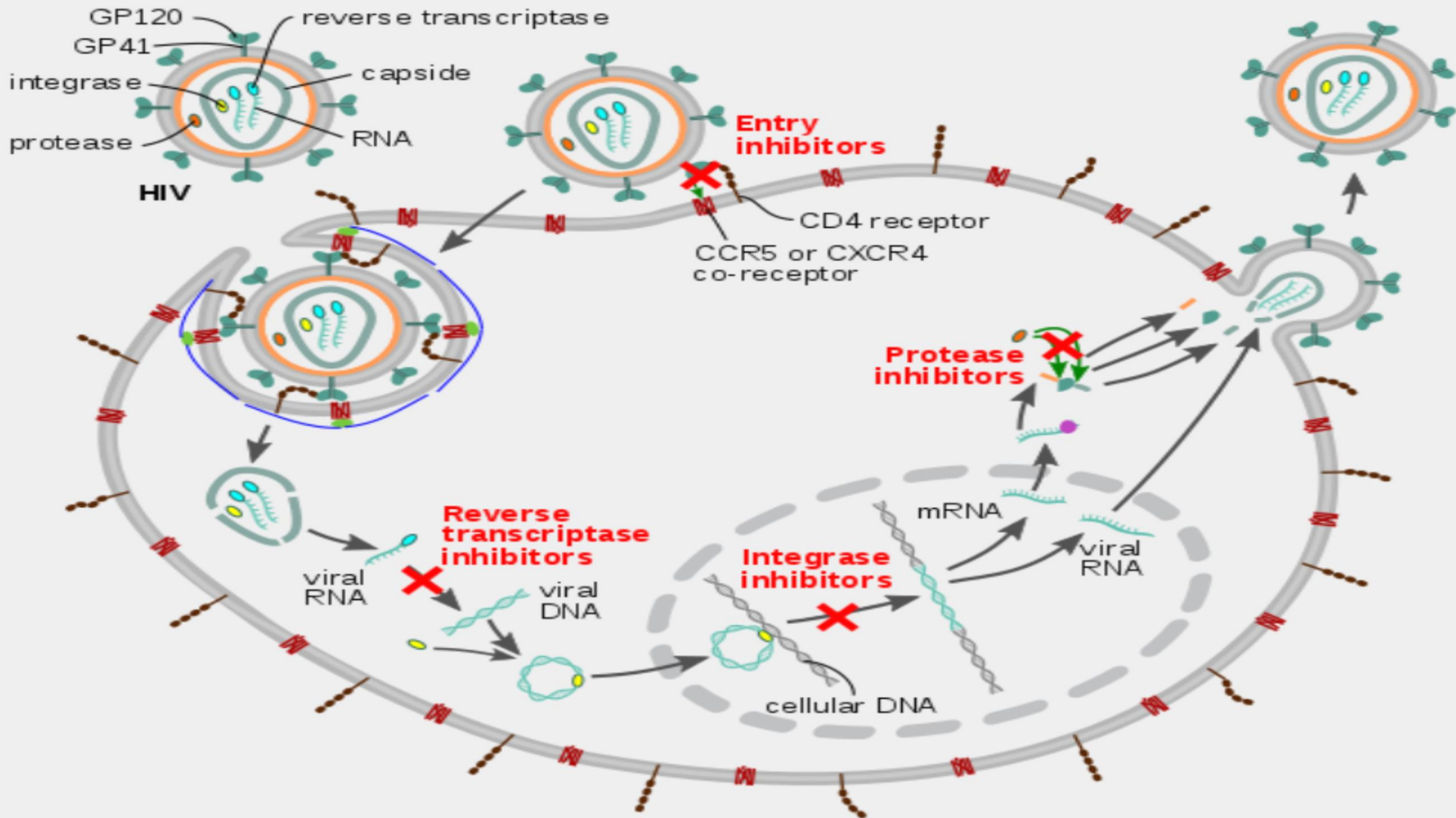


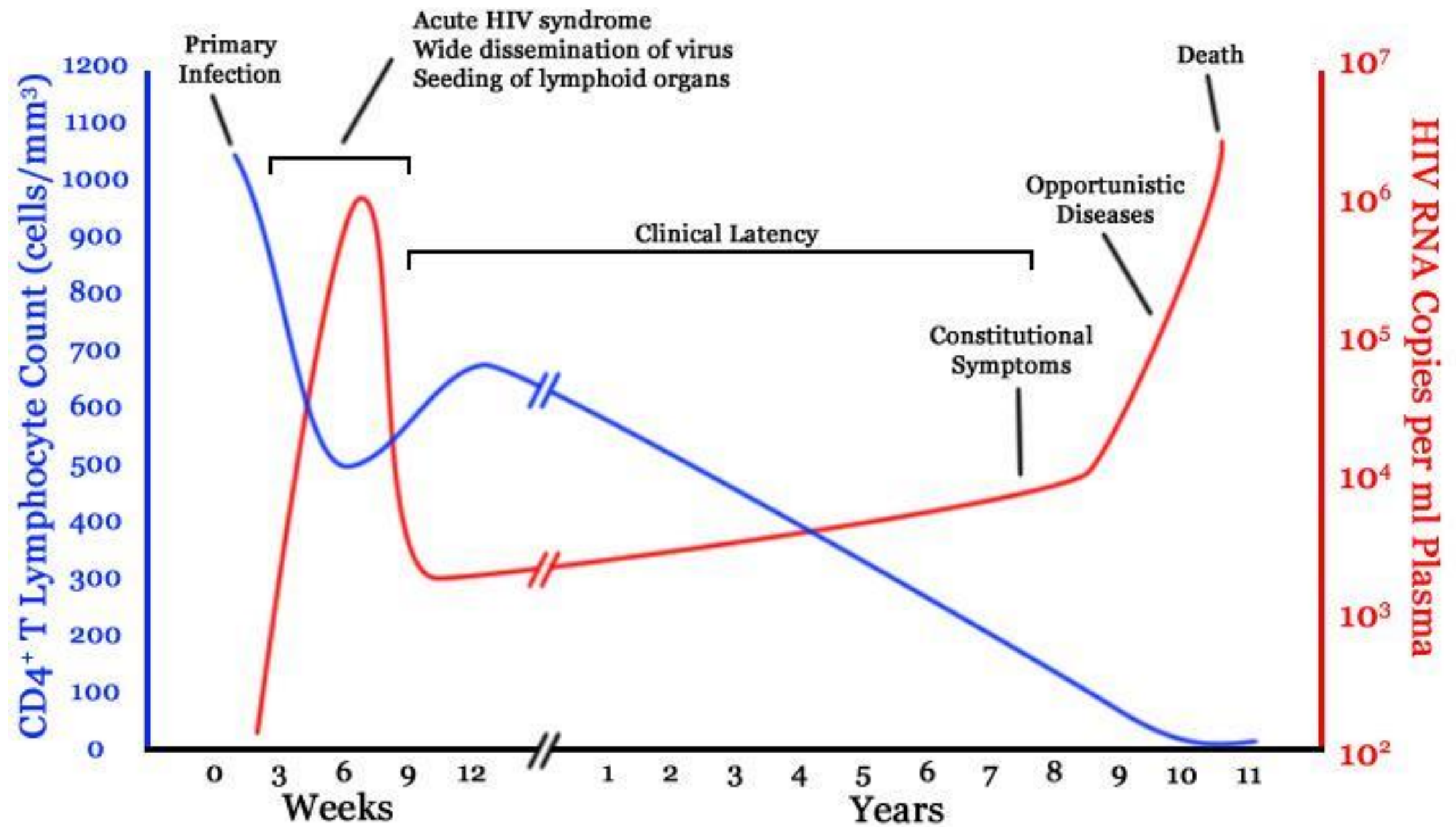
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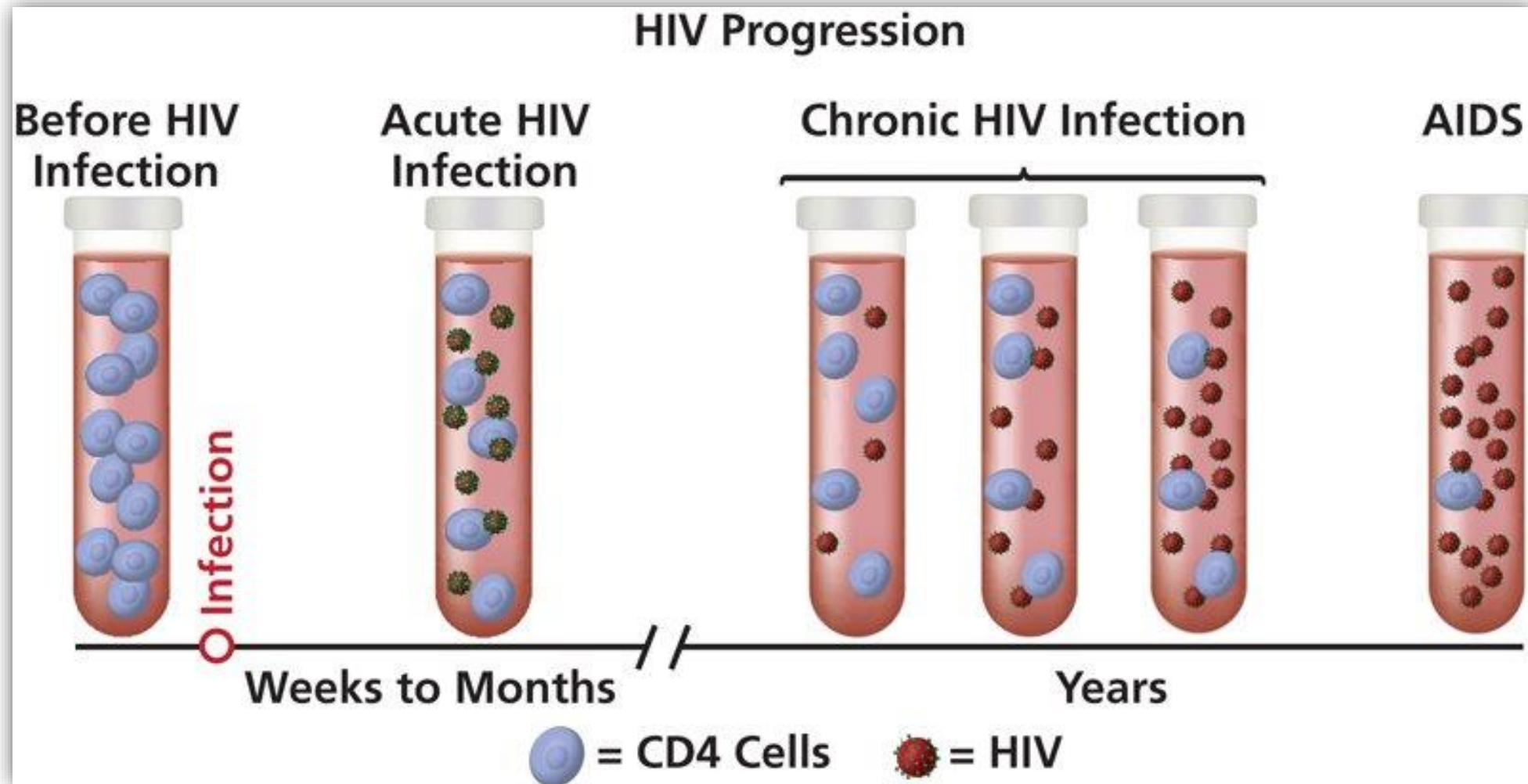
HIV-1 Group M is the strain of HIV that is responsible for the global HIV epidemic.







Disease Progression



What is AIDS (Acquired Immunodeficiency Syndrome) ? (CDC)



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Stage*	Age on date of CD4 T-lymphocyte test					
	<1 year		1–5 years		6 years through adult	
	Cells/ μ L	%	Cells/ μ L	%	Cells/ μ L	%
1	$\geq 1,500$	≥ 34	$\geq 1,000$	≥ 30	≥ 500	≥ 26
2	750–1,499	26–33	500–999	22–29	200–499	14–25
3	<750	<26	<500	<22	<200	<14

*The stage is based primarily on the CD4+ T-lymphocyte count; the CD4+ T-lymphocyte count takes precedence over the CD4 T-lymphocyte percentage, and the percentage is considered only if the count is missing.

- If none of the above apply (e.g., because of missing information on CD4 test results), the stage is U (unknown).

Stages of HIV Infection (WHO)



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Stage 1 (Asymptomatic)

- Asymptomatic
- Persistent generalized lymphadenopathy (≥ 2) for ≥ 6 months

Stage 2 (Mild)

- Unexplained weight loss $<10\%$ total BW
- Recurrent respiratory infections (e.g. sinusitis, bronchitis, otitis media, and pharyngitis)
- Dermatological conditions (herpes zoster flares, angular cheilitis, recurrent oral ulcerations, papular pruritic eruptions, seborrheic dermatitis, and fungal nail infections)

Stage 3 (Moderate)

- Weight loss $\geq 10\%$ of total BW
- Prolonged unexplained diarrhea (≥ 1 month)
- Pulmonary tuberculosis
- Severe systemic bacterial infections (pneumonia, pyelonephritis, empyema, pyomyositis, meningitis, bone and joint infections, and bacteremia).
- Mucocutaneous conditions (recurrent oral candidiasis, oral hairy leukoplakia, and acute necrotizing ulcerative stomatitis, gingivitis, or periodontitis)



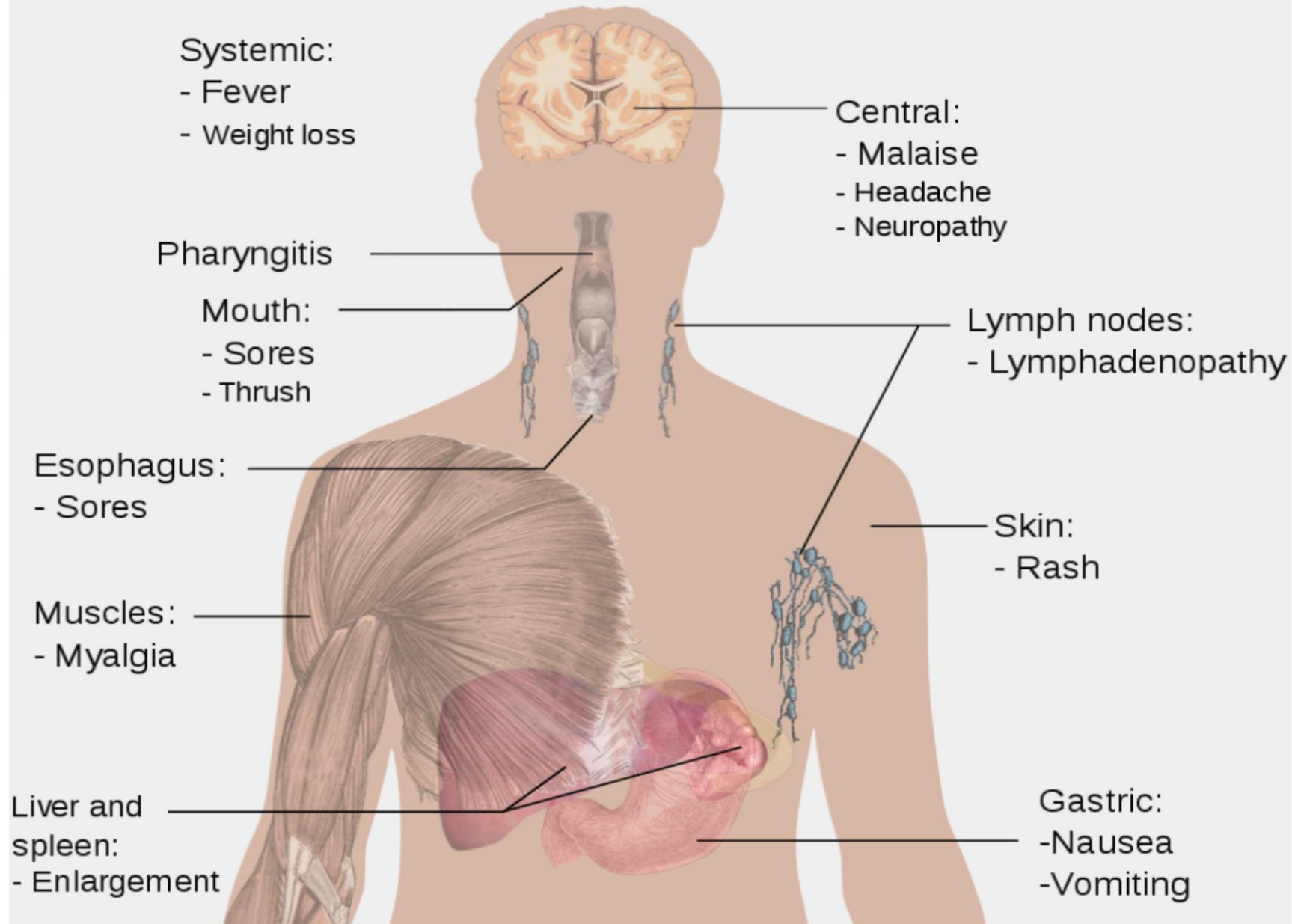
Stage 4 (Severe/AIDS)

- HIV wasting syndrome
- *Pneumocystis pneumonia* (PCP)
- Recurrent severe or radiological bacterial pneumonia
- Extrapulmonary tuberculosis
- HIV encephalopathy
- CNS toxoplasmosis
- Chronic (≥ 1 month) or orolabial herpes simplex infection
- Esophageal candidiasis
- Kaposi's sarcoma
- Other conditions:
 - CMV infections (CMV retinitis or infection of organs other than the liver, spleen or lymph nodes)
 - Disseminated fungal infection: extrapulmonary cryptococcosis, disseminated endemic mycoses (e.g., coccidiomycosis, penicilliosis, histoplasmosis), cryptosporidiosis, isosporiasis
 - Disseminated non-tuberculous mycobacteria infection,
 - Tracheal, bronchial or pulmonary candida infection,
 - Visceral herpes simplex infection,
 - Acquired HIV-associated rectal fistula,
 - Cerebral or B cell non-Hodgkin lymphoma,
 - Progressive multifocal leukoencephalopathy (PML)
 - HIV-associated cardiomyopathy or nephropathy

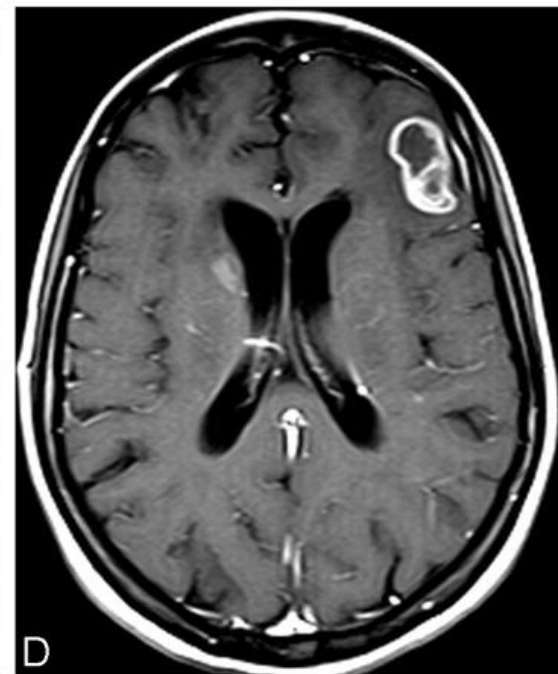
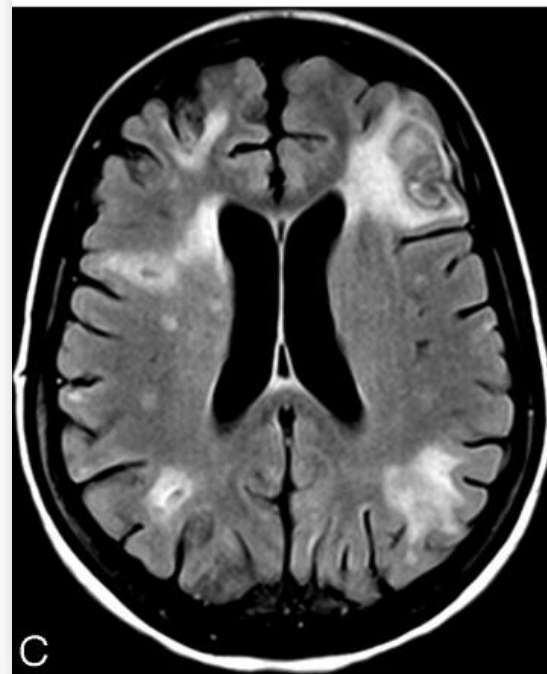
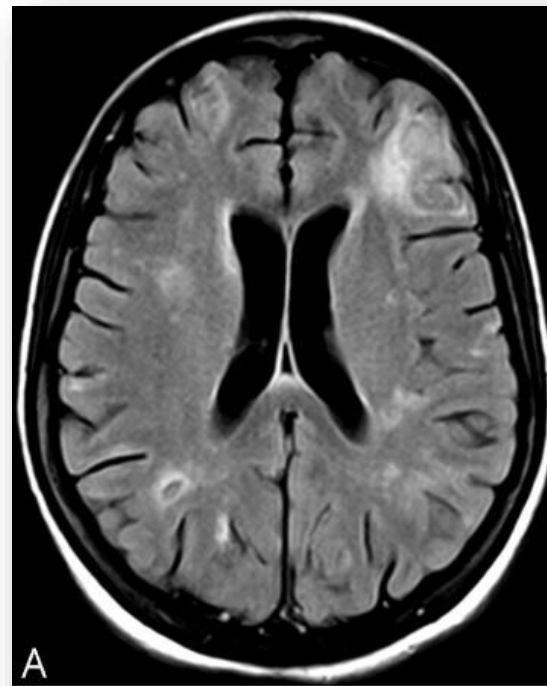
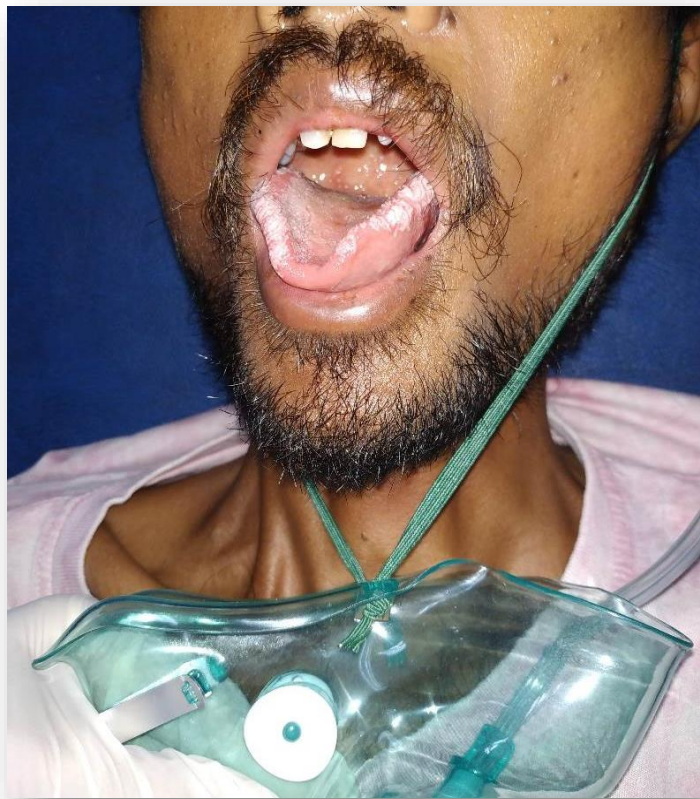
Main symptoms of Acute HIV infection

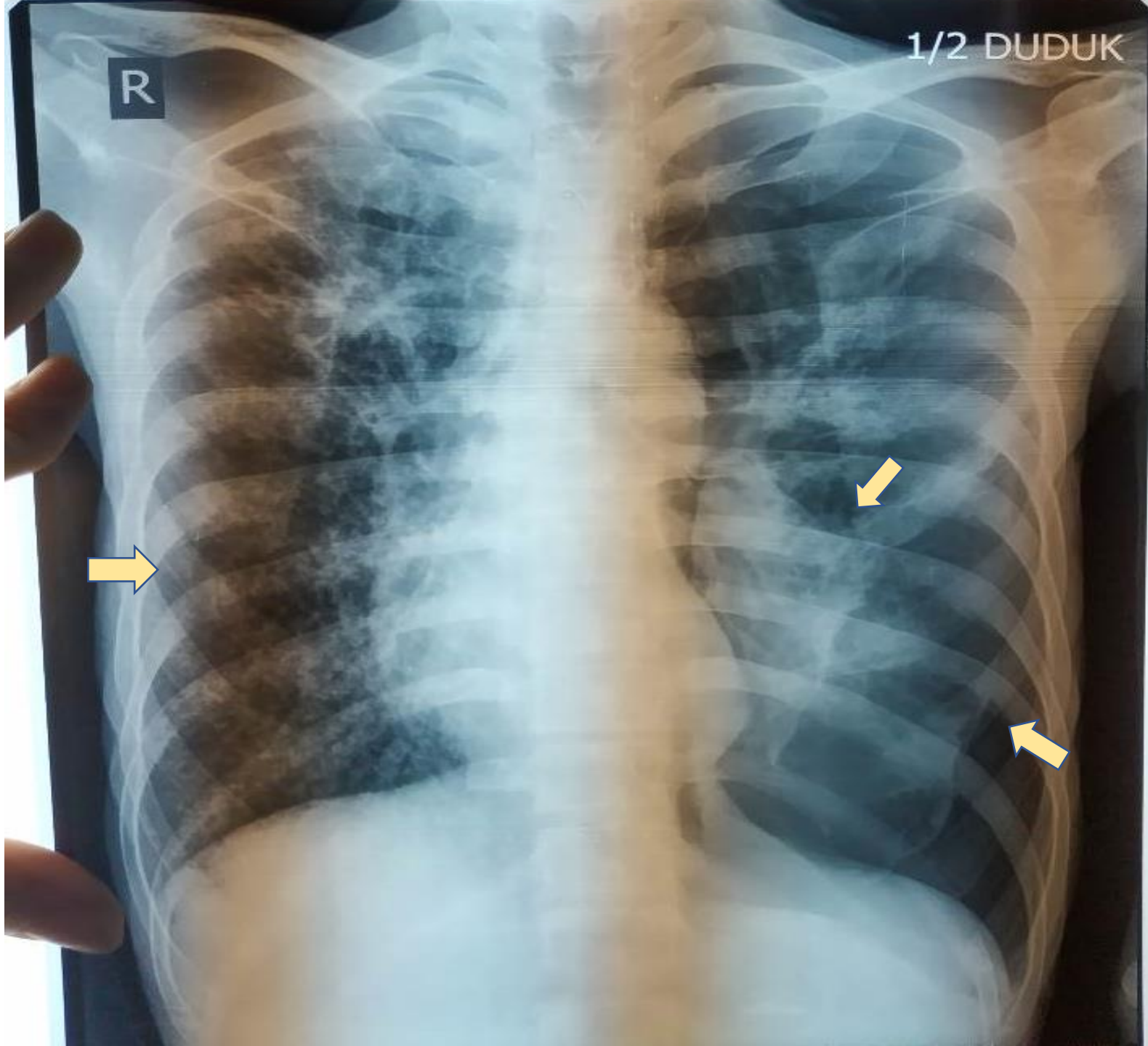


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How HIV is Transmitted?

Four Main Principles in HIV Infection



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Always remember that...



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YOU CAN'T GET HIV FROM... **AVERT.org**

			
KISSING	HUGGING	SHARING FOOD	INSECT BITES
			
TOILET SEATS	BATHING	SNEEZES AND COUGHS	SWEAT

HIV Risk Behaviors (1)



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Estimated Per-Act Probability of Acquiring HIV from an Infected Source, by Exposure Act*

Type of Exposure	Risk per 10,000 Exposures
Parenteral	
Blood Transfusion	9,250
Needle-Sharing During Injection Drug Use	63
Percutaneous (Needle-Stick)	23
Sexual	
Receptive Anal Intercourse	138
Insertive Anal Intercourse	11
Receptive Penile-Vaginal Intercourse	8
Insertive Penile-Vaginal Intercourse	4
Receptive Oral Intercourse	Low
Insertive Oral Intercourse	Low

HIV Risk Behaviors (2)

Other^	
Biting	Negligible
Spitting	Negligible
Throwing Body Fluids (Including Semen or Saliva)	Negligible
Sharing Sex Toys	Negligible

Higher risk



- **Receptive anal sex (1.4%)**
- **Receptive vaginal sex (0.08%)**
- **Insertive anal sex (0.06-0.62%)**
- **Insertive vaginal sex (0.04%)**
- **Oral sex (?)**

Lower risk

Factors that can increase risk:

- Higher viral load
- STIs
- Some vaginal conditions
- Tearing and abrasions
- Menstruation, other bleeding

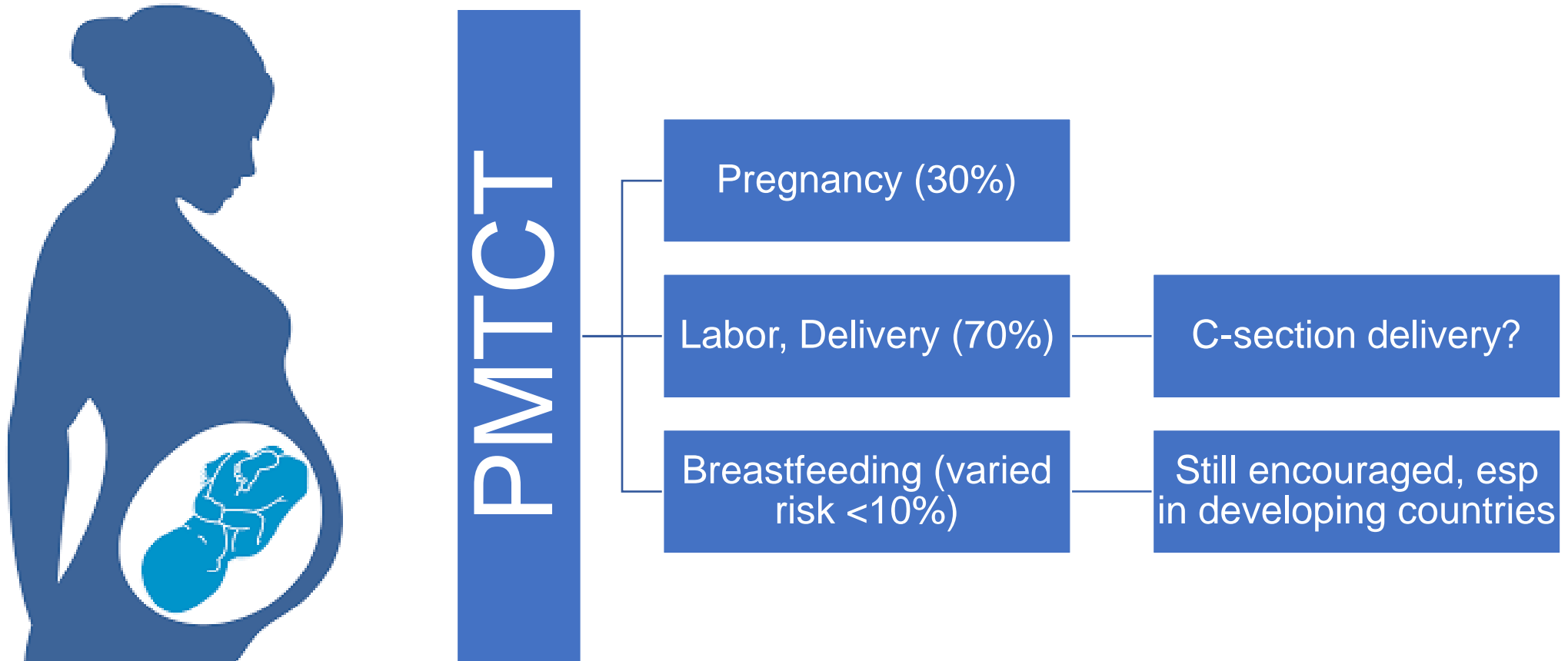
Factors that can decrease risk:

- Lower viral load
- PEP and PrEP
- Circumcision
- Lubrication

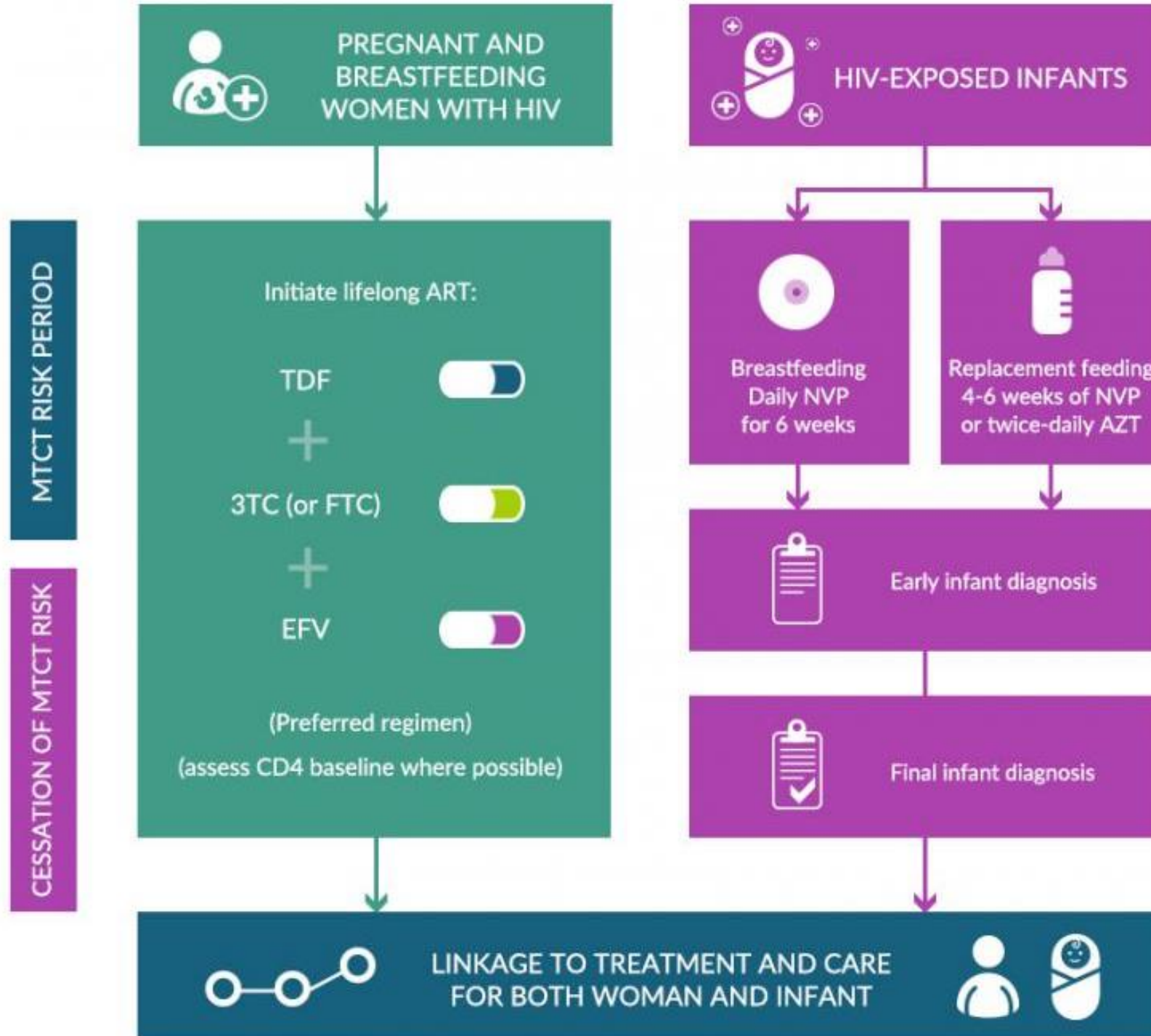
Special Situations: Mother-to-child transmission



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- ARV as soon as possible
 - with treatment 1% risk, without 15-45% (related to Viral Load)





YOU **CAN'T** PREVENT OR CURE HIV BY...

AVERT.org



WASHING AFTER SEX



SEX WITH A VIRGIN



PULLING OUT METHOD



SPELLS AND HERBAL MEDICINE



USING THE CONTRACEPTIVE PILL

Condoms and **PrEP** used correctly and consistently **protect** you from **HIV** transmission during sex.

How to Prevent?

Prevention Strategies



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Medical Strategies

- Condoms, Preventing STDs
- Circumcision
- Anti HIV Drugs: PrEP, PEP, ART Treatment

Social Strategies

- Sex education, safe sex, abstinence
- Safe needle program
- Advertising and Campaigns
- Public Health Regulation

Circumcision and HIV/STI Prevention



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Partial protection

- 60% reduced risk of HIV

- Cervical cancer (HPV)
- Herpes simplex virus (HSV)
- Chlamydia
- Syphilis

- Candidiasis
- Warts
- Dysuria
- Gonorrhea
- Bacterial vaginosis

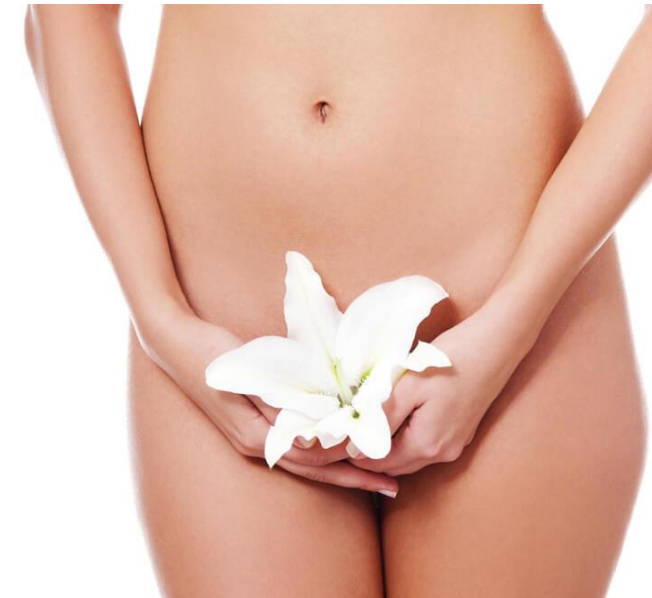
Sexual Behavior



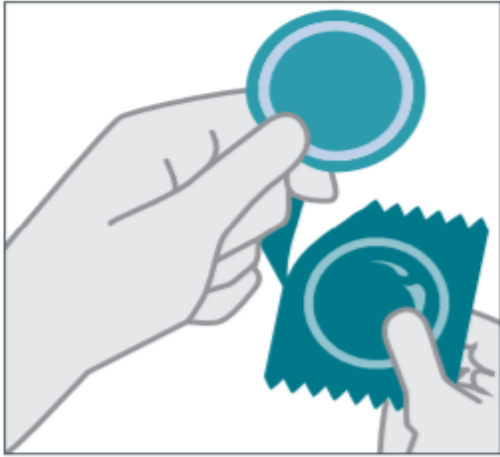
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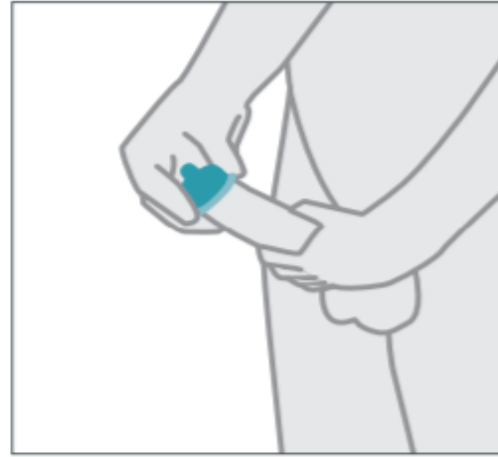
Which one is more risky?



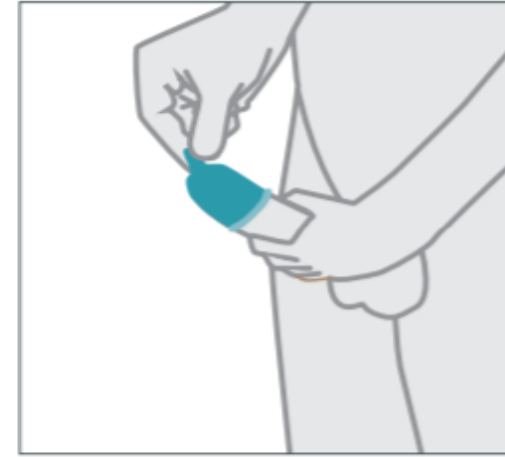
Using Condom



Carefully open and remove condom from wrapper.



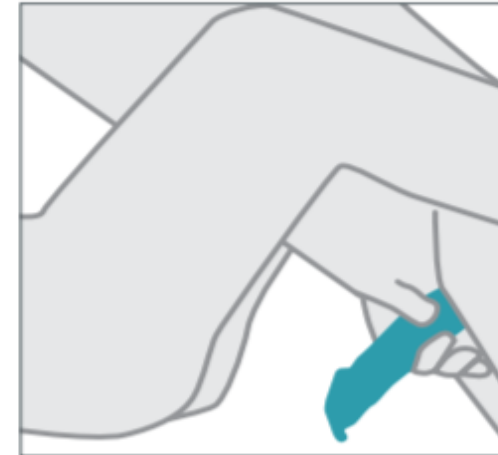
Place condom on the head of the erect, hard penis. If uncircumcised, pull back the foreskin first.



Pinch air out of the tip of the condom.



Unroll condom all the way down the penis.



After sex but before pulling out, hold the condom at the base. Then pull out, while holding the condom in place.



Carefully remove the condom and throw it in the trash.



Pathogen	Estimated efficacy %
Human immuno deficiency virus	>90 protection
Hepatitis B virus	>90 protection
HPV	Not significant
Herpes simplex virus type 2	10-50 protection
<i>Cytomegalovirus</i>	50-90 protection
<i>Chlamydia trachomatis</i>	50-90 protection
<i>Neisseria gonorrhoeae</i>	>90 protection
<i>Trichomonas vaginalis</i>	>90 protection??*
<i>Treponema pallidum</i>	50-90 protection
<i>Haemophilus ducreyi</i>	10-50 protection
<i>Pthirus pubis</i>	Not significant

PrEP (Pre-Exposure Prophylaxis)



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- Protection up to 92% (varied, related to adherence)
- Main Target: High Risk Groups (Adults, >35 kg)
 - Sexual transmission
 - HIV-discordant couples, Non-monogamous, anal sex, without condom, other STD + (6 months), partner of IDU
 - IDU
 - 6 months: using, sharing equipment, on IDU treatment



PrEP Algorithm



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Routine evaluation

/ 3 months:

- behavioral risk reduction,
- adherence,
- access to condoms,
- pregnancy?
- STI?

Very high-risk, HIV-negative patient:
Who is sexually active with an HIV-positive partner(s)
and/or
Who is sexually active in a high prevalence area or social network
or
Who has inadequate condom adherence
or
Who has a sexually transmitted infection
or
Who uses illicit drugs or has alcohol dependence
or
Who barter for sex
or
Who has a partner(s) with unknown HIV-1 status with at least one of the above risk factors

Absence of symptoms for acute HIV infection

or

Negative result on fourth-generation testing and no at-risk activity within the past 11 to 14 days (preferred) or negative result on enzyme-linked immunosorbent assay/Western blot

Document patient understanding of risks and benefits, and agreement to be adherent with medication and follow-up visits

Patient is candidate for PrEP*

Repeat HIV testing at least every three months; provide risk reduction education

PEP (Post Exposure Prophylaxis)



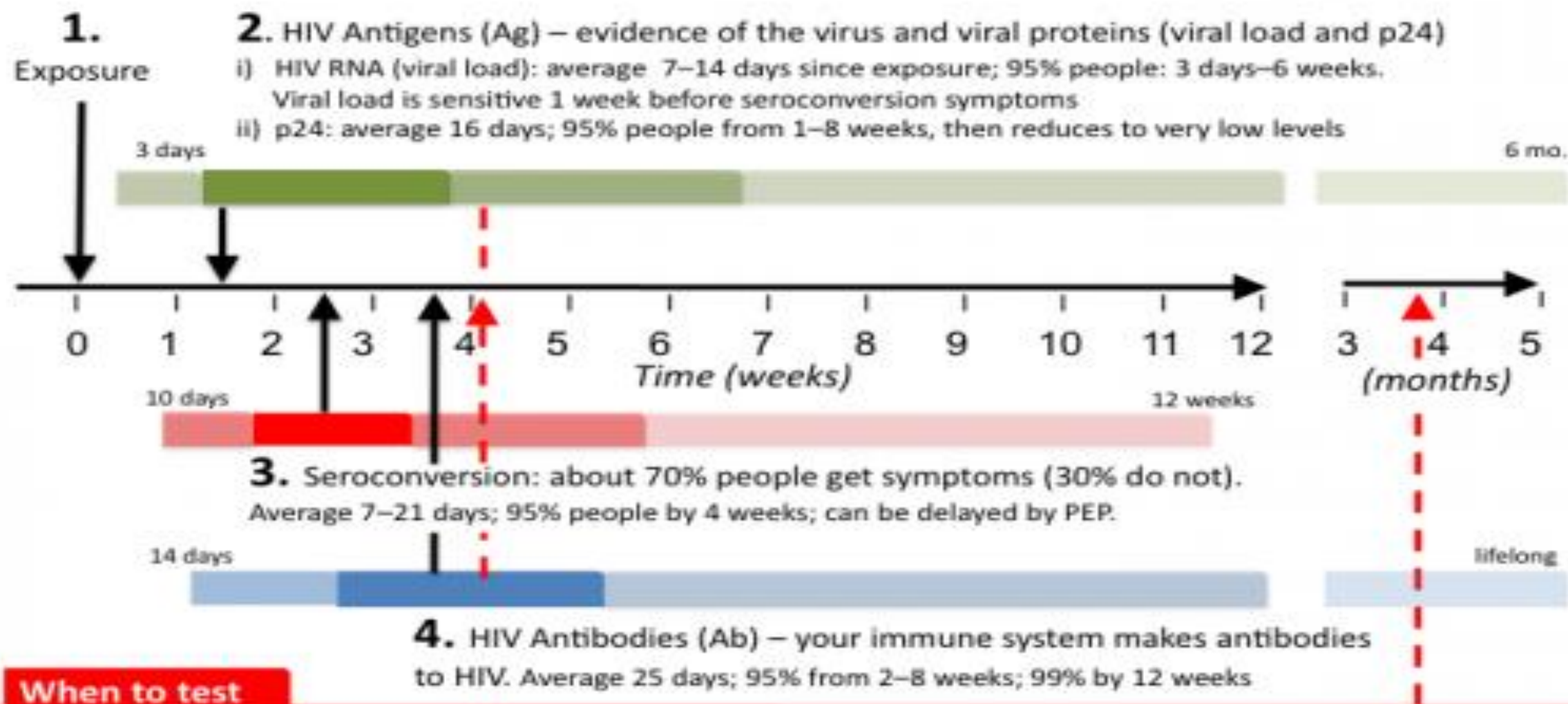
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- **72 HOURS** after exposure
 - Talk to your health care provider or an emergency room doctor about PEP right away.
- Special conditions:
 - High risk sexual encounter, exposed? (e.g. condom broke, no protection, sexually assaulted)
 - Shared needles and works to prepare drugs (for example, cotton, cookers, water)

Evaluation 3 mo, 6 mo

Time from HIV sexual exposure until HIV can be detected

NOTE: Times are approximate and average. A small percentage of people generate responses earlier or later, shown by lighter bars.



Viral load tests *can* detect HIV one week before symptoms, but are not used routinely.

4th generation (Ab/Ag) HIV tests detect 95% of infections within 4 weeks. UK guidelines recommend testing at 4 weeks. Confirm with a second test after three months later as 5% of people take longer.

Confirm a negative result with a second test three months after your first test.

Who should get tested?

- **Regardless of risk, 15-65 yo** *unless refuses
- <15, >65 yo, screening for high risk
 - MSM
 - IDU
 - Unprotected anal, vaginal intercourse
 - Partner with High risk behaviors
 - History of STI
 - Sex workers
- Other: pregnancy



Antiretroviral Therapy (WHO)

Early treatment is Prevention!

First-line ART	Preferred first-line regimens	Alternative first-line regimens ^{a b}
Adults (including pregnant and breastfeeding women and adults with TB and HBV coinfection)	TDF + 3TC (or FTC) + EFV	AZT + 3TC + EFV AZT + 3TC + NVP TDF + 3TC (or FTC) + NVP
Adolescents (10 to 19 years) ≥ 35 kg		AZT + 3TC + EFV AZT + 3TC + NVP TDF + 3TC (or FTC) + NVP ABC + 3TC + EFV (or NVP)
Children 3 years to less than 10 years and adolescents < 35 kg	ABC + 3TC + EFV	ABC + 3TC + NVP AZT + 3TC + EFV AZT + 3TC + NVP TDF + 3TC (or FTC) + EFV TDF + 3TC (or FTC) + NVP
Children < 3 years	ABC or AZT + 3TC + LPV/r	ABC + 3TC + NVP AZT + 3TC + NVP

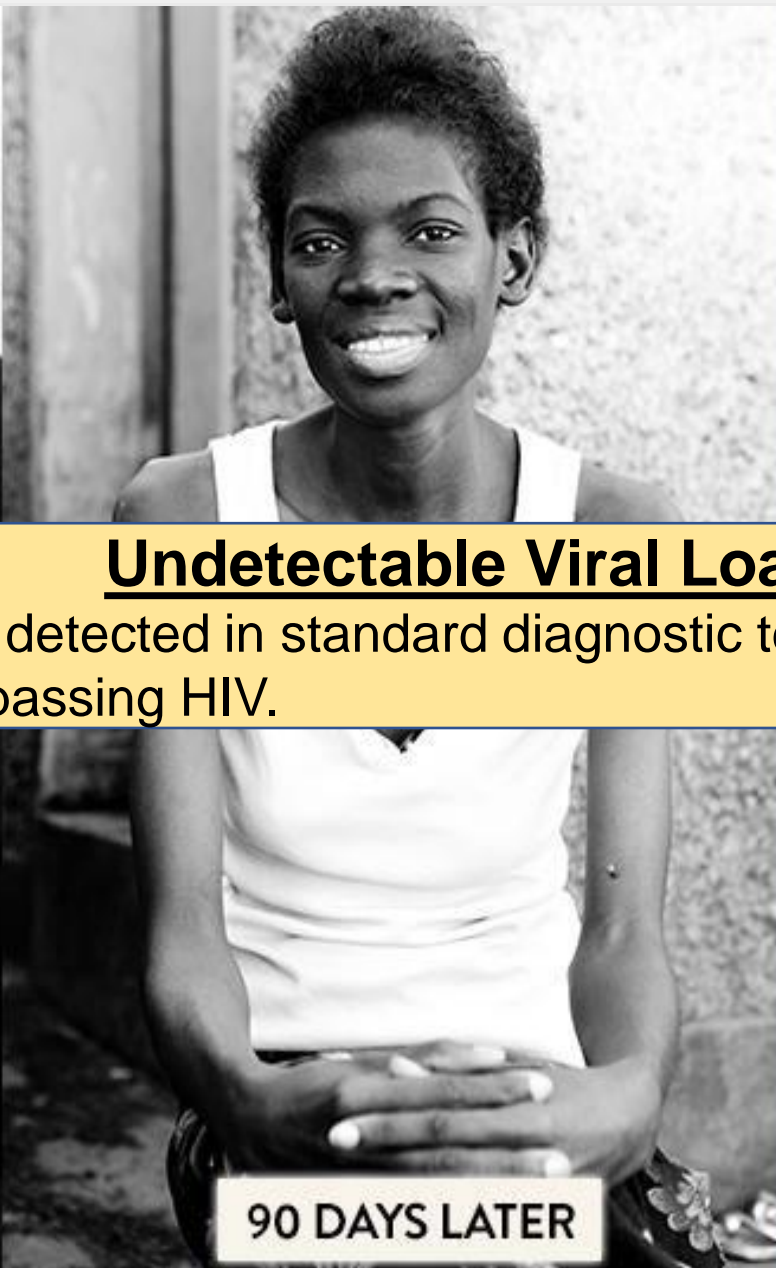
^a For adolescents, using d4T as an option in first-line treatment should be discontinued and restricted to special cases in which other ARV drugs cannot be used and to the shortest time possible, with close monitoring. For children, d4T use should be restricted to the situations in which there is suspected or confirmed toxicity to AZT and lack of access to ABC or TDF. The duration of therapy with this drug should be limited to the shortest time possible. See Box 10.7 for guidance on phasing out d4T.

^b ABC or boosted PIs (ATV/r, DRV/r, LPV/r) can be used in special circumstances.

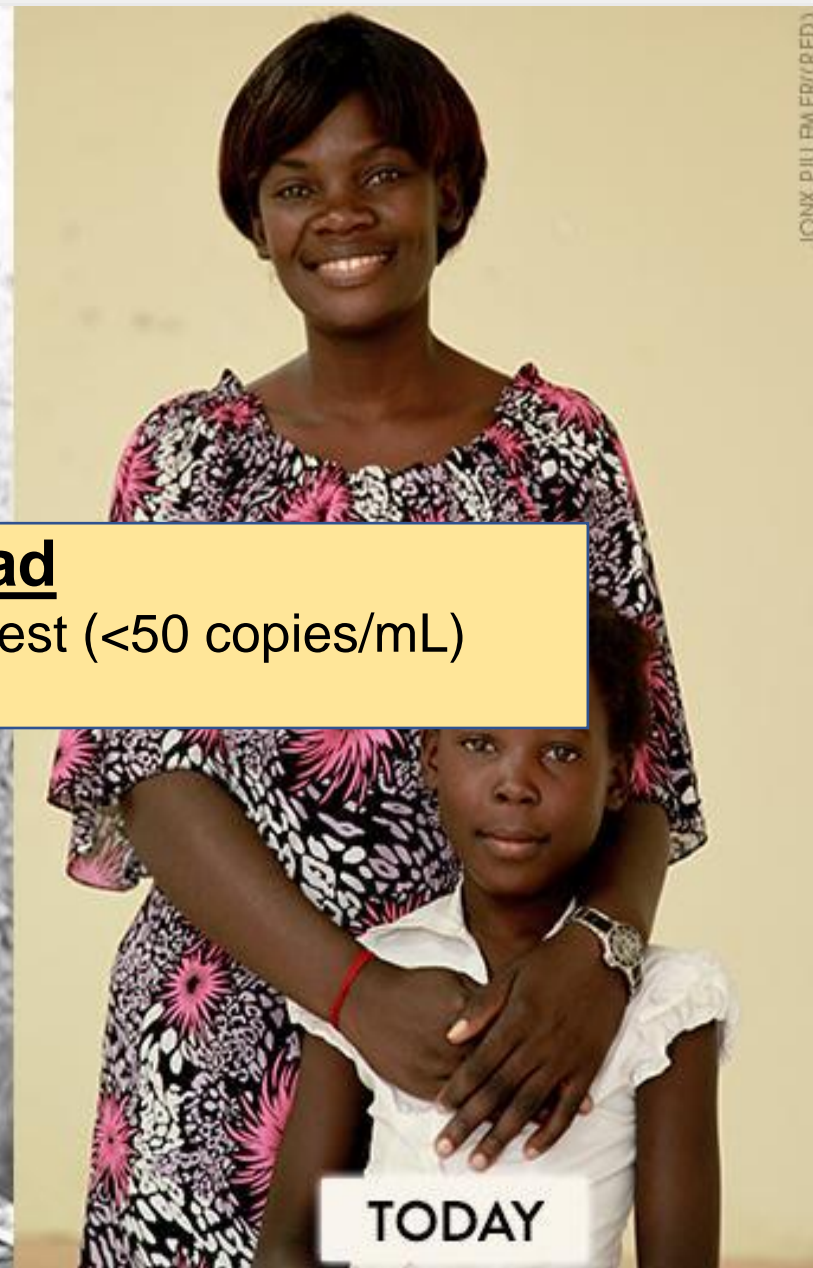


(RED)

BEFORE TREATMENT



90 DAYS LATER



TODAY

Undetectable Viral Load

- HIV cannot be detected in standard diagnostic test (<50 copies/mL)
- No chance of passing HIV.

HIV and Stigma



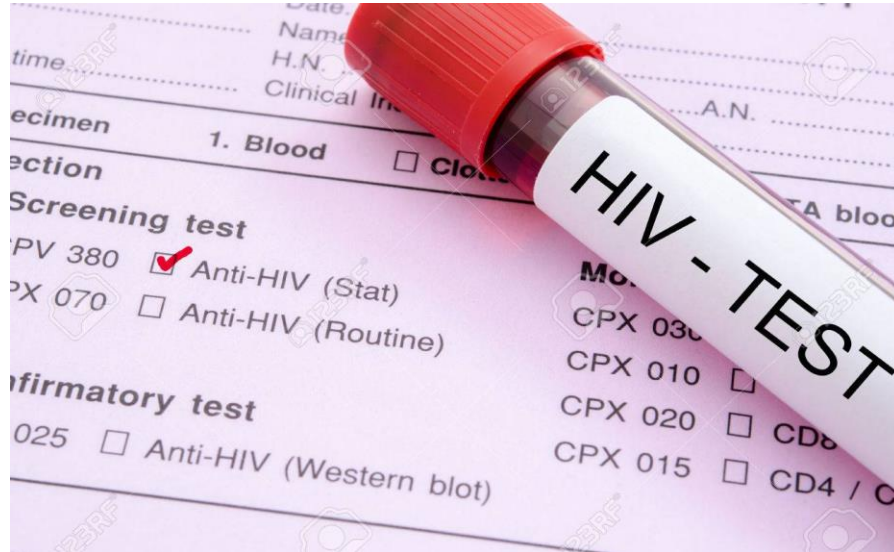
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Take Home Notes



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HIV is not the end 😊

Thank you!



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