Vaccination Guidelines

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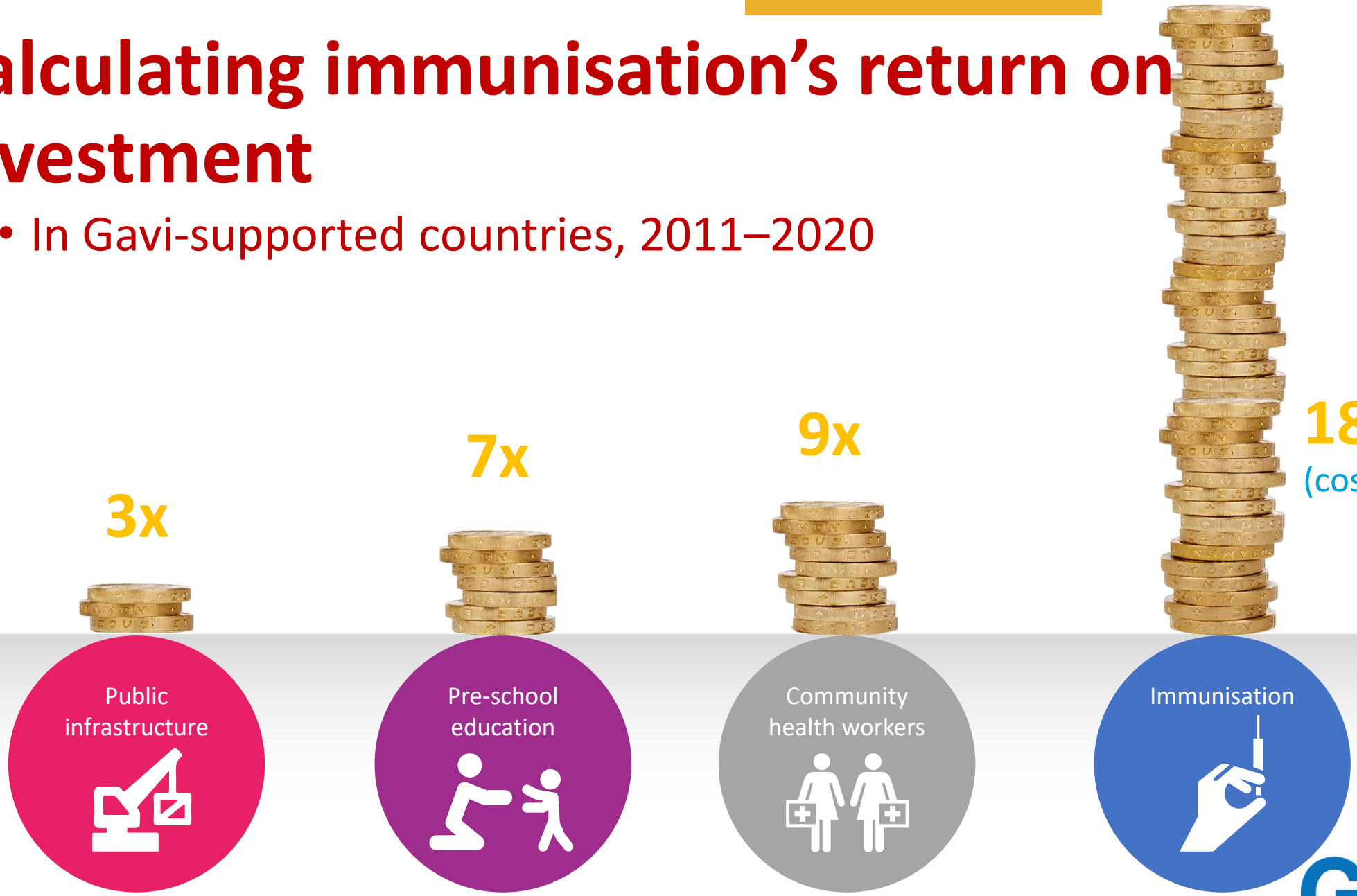
4th Southern African HIV Clinicians Society Conference / 24-27 October 2018
Gallagher Convention Centre, Midrand

Calculating immunisation's return on investment

- In Gavi-supported countries, 2011–2020



Gavi The Vaccine Alliance

Whole Life Approach to Immunization

- Importance of vaccination
  - Prevention to avert health spending
  - Prevention is a “best buy”
  - Vaccines seen as a solution for national & economic security
  - Dual function of vaccines

Vaccination essential element for promoting

- Health equity
- Economic equity (reducing medical & non-medical costs)
- Social equity –access to the health care system
- Vertical equity intervention- vaccines for diseases of poverty

WORLD IMMUNIZATION WEEK 2017
#VACCINESWORK

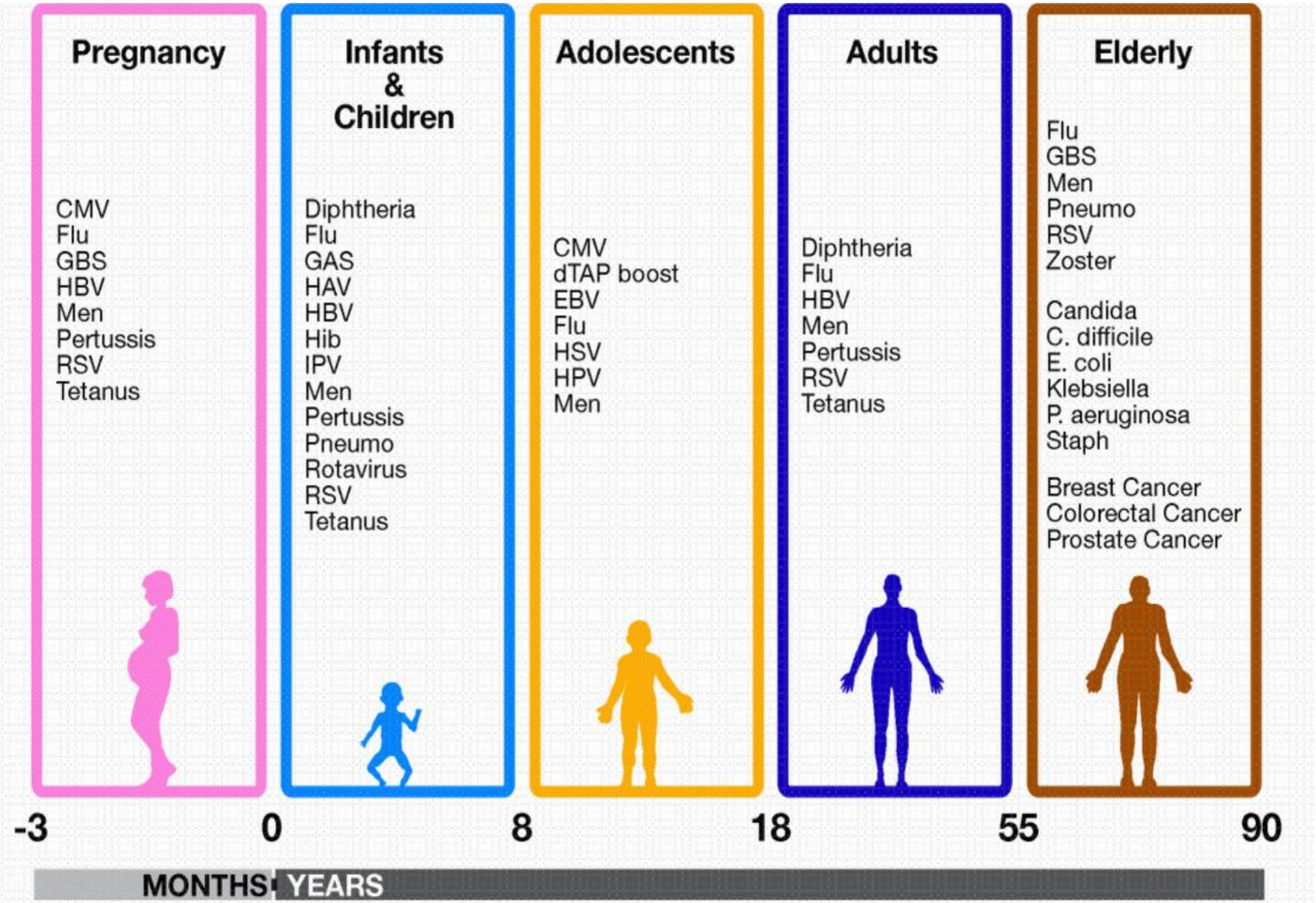
shot @life

When **immunization rates are high,** the wider community is **protected** including:

Infants who are too young to receive their vaccines.

Older adults at risk of serious diseases.

People who take medication that lowers their immune systems.



R.Rappuoli, C. Mandl, S: Black , E. De Gregorio
Nature Reviews Immunology | November 2011; doi:10.1038/nri3085

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Guidelines for the vaccination of HIV-infected adolescents and adults in South Africa

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TABLE 1: Vaccination guidelines for HIV-infected adolescents and adults.

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Zoster	RS	≥ 200 cells/mL	1 dose	none	Only use if CD4+ count ≥ 200 cells/µL

MMR, measles, mumps, and rubella; R, recommended; RS, recommended in selected individuals; NR, not recommended; VL, viral load; HBsAb, hepatitis B surface antibody; MSM, men who have sex with men.

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Guidelines for the vaccination of HIV-infected adolescents and adults in South Africa

- Recommendations made on the basis:
  - **Vaccines with strong local evidence for use**
    - Influenza
    - Pneumococcal vaccination
    - Hepatitis B, Tetanus-diphtheria
  - **Vaccines recommended but either local data lacking or warranted in selected cases**
    - Pertussis
    - Meningococcal, hepatitis A
  - **Vaccines with no recommendation (NR) OR recommended in selected individuals (RS)**
    - Varicella
    - Herpes Zoster
    - Measles, mumps & rubella

S Afr J HIV Med 2018; 19(1)

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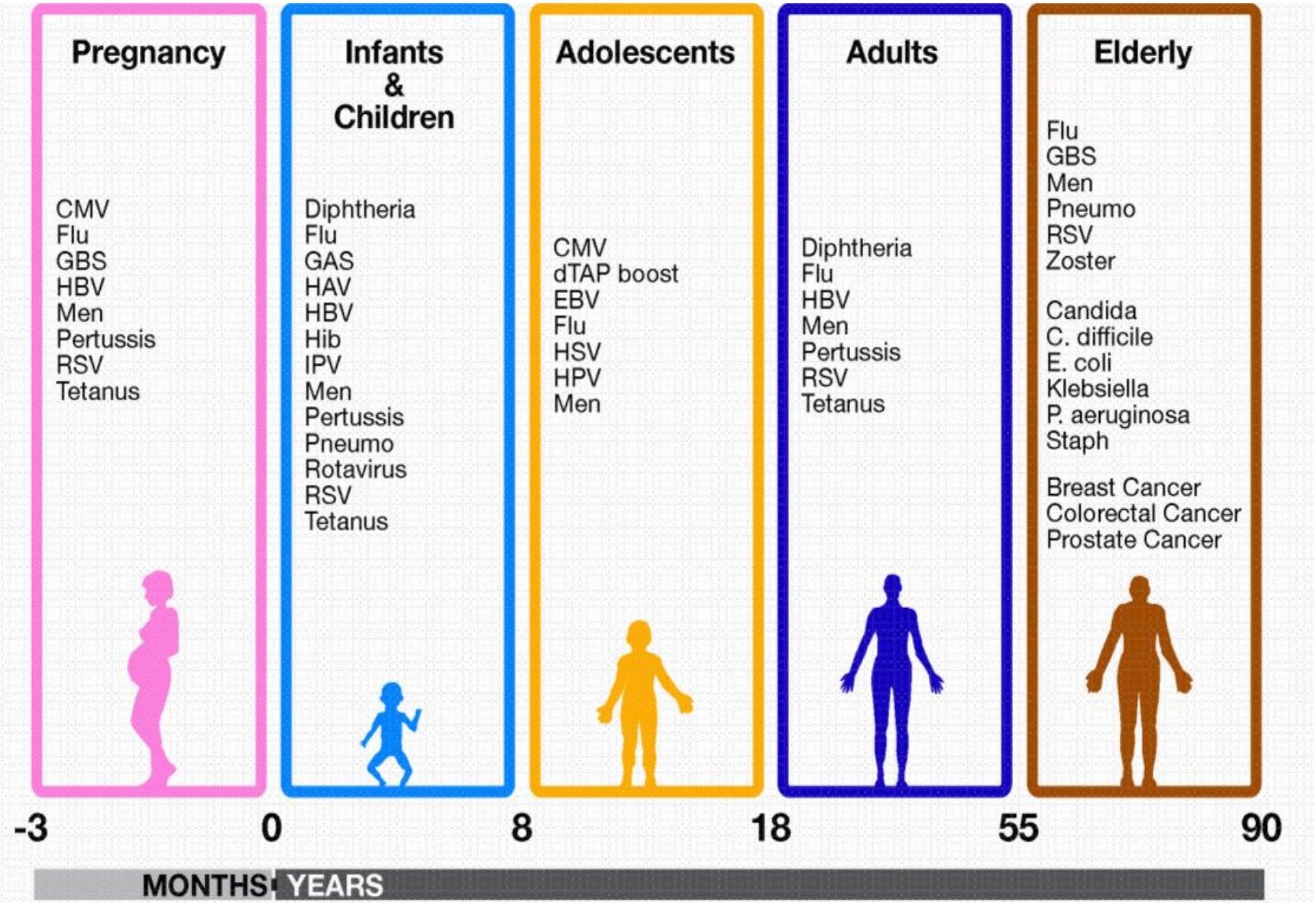
Ms XB

- 24 Year old Nursing student
  - HIV positive $CD4^+$ Count of 450 cells/µL
  - On ART for the past 3 years
    - Regimen of FDC (TDF/FTC/EFV)
    - Last viral load –LDL 6 months ago
  - 14 weeks pregnant
  - No other medical conditions & clinically well
  - **What vaccines does she require?**



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Viral Load	**15 000 copies/ml**

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- **Pertussis**
  - Emerging epidemiological data on burden of pertussis in HIV endemic countries
  - Only pregnant women regardless of CD4+ count or viral load
  - Recommend acellular vaccine

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Guidelines for the vaccination of HIV-infected adolescents and adults in South Africa

- **Influenza**
  - 1 dose yearly
  - Irrespective of CD4+ cell count, HIV viral load or pregnancy status

NK

- 38-yr-old
- Diagnosed HIV +ve 2004
  - $CD4^+$ 11 (nadir)
  - ART initiation 03/2004
    - D4T/3TC/EFV
  - 06/2008
    - Diabetes Mellitus
  - Virologic failure 09/2010
    - Put on second line regimen
    - TDF/FTC/LPV/r
    - VL- <50 cps/mL
- Previous OI's
  - Cryptococcal Meningitis 2004
  - PTB 2011 (treated for 8/12)
- Social history
  - Employed as a senior clerk
  - Alcohol on week-ends

Do you need to vaccinate and what vaccines?

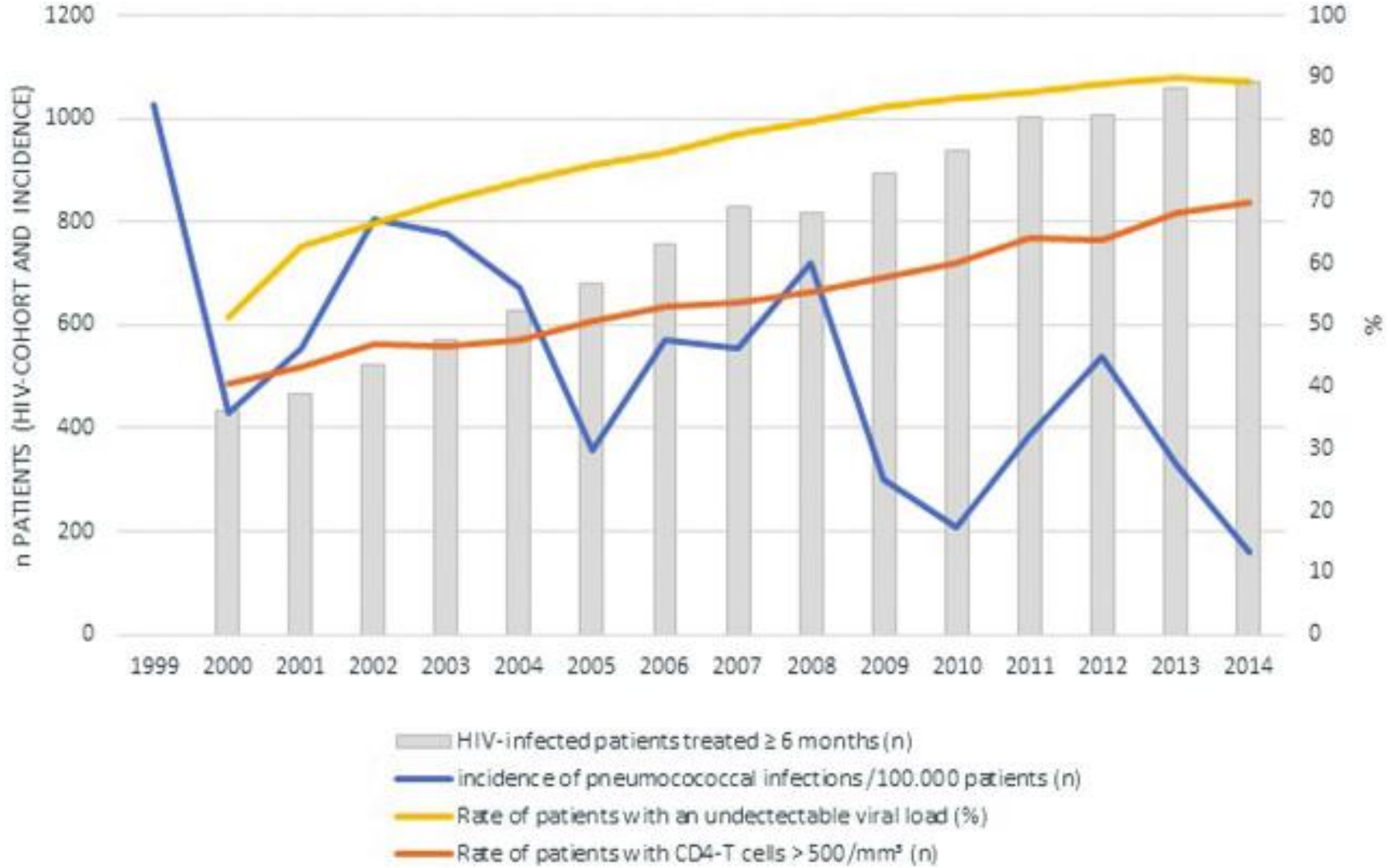
Table 1 Factors associated with an increased risk of pneumococcal diseases

Age	Host factors		External factors	Behavioural
	Immunocompetent	Immunocompromised		
<2 years ≥50 years	Underlying medical conditions • CCVD • CPD • Diabetes • Alcoholism • CLD • Cerebrospinal fluid leaks	HIV CRF, nephrotic syndrome Cancer (solid, haematological) Organ and bone marrow transplant Auto-immune diseases Immunosuppressive therapy, corticosteroids Primary immunodeficiencies Functional and anatomical asplenia	Socioeconomic Environmental • Preceding viral respiratory infection • Residence in an institution (e.g. nursing home) • Frequent contact with children	Smoking Heavy alcohol use

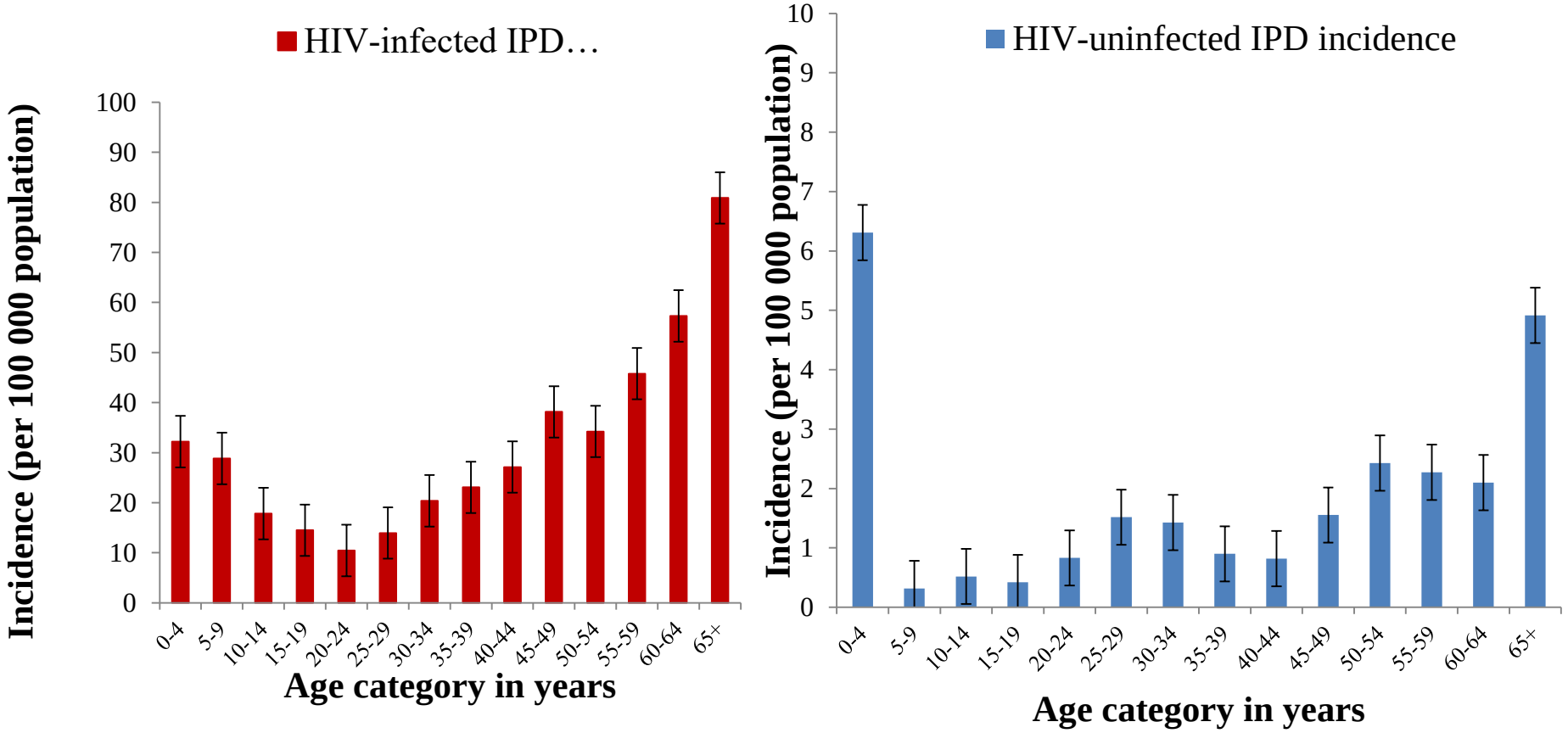
CCVD: cardiovascular and cerebrovascular disease; CPD: chronic pulmonary disease, CLD: chronic liver disease; CRF: chronic renal failure; HIV: human immunodeficiency virus

Eur J Clin Microbiol Infect Dis 2015; 34:19-31

Antiretroviral Therapy as Prevention of … Pneumococcal Infections?



Estimated incidence of invasive pneumococcal disease amongst HIV-infected and -uninfected persons by age category, South Africa, 2017



GERMS-SA, unpublished data

Slide courtesy – Susan Meiring

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- **Pneumococcal**
  - All HIV-infected regardless of CD4+ with suppressed viral load
  - Prime-boost approach
  - PCV13 followed by PPV23 eight weeks later
  - PCV13 alone is sufficient

DPH

- 21-yr-old female
  - HIV positive current CD4+ 218 on FDC (TFE)
  - Previously treated Disseminated Kaposi Sarcoma
    - Pulmonary involvement
- previously vaccinated with polysaccharide vaccine
- What vaccines are necessary?

Immunogenicity and Safety of 13-Valent Pneumococcal Conjugate Vaccine in HIV-Infected Adults Previously Vaccinated with Pneumococcal Polysaccharide Vaccine

Marshall J. Glesby,[1] Wendy Watson,[3] Cynthia Brinson,[4] Richard N. Greenberg,[5] Jacob P. Lalezari,[6] Daniel Skiest,[7] Vani Sundaraiyer,[8] Robert Natuk,[2] Alejandra Gurtman,[2] Daniel A. Scott,[2] Emilio A. Emini,[2] William C. Gruber,[2] and Beate Schmoele-Thoma[9]
The Journal of Infectious Diseases® 2015;212:18–27

- Immunogenicity studies with single-dose or combination regimens of PCV7 and PPSV23 in HIV – yielded variable results
- Open-label, single-arm study
  - Safety & immunogenicity of 3 doses of PCV13
  - Given at 6 monthly intervals
- **<u>Conclusion:</u>**
  - Vaccination with PCV13 induces anticapsular immunoglobulin G and opsonophagocytic anti-body responses in HIV-infected adults with prior PPSV23 vaccination and CD4 cell count ≥200 cells/mm^3. The observations support the use of PCV13 in this population.

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South African Guidelines for Pneumococcal Vaccination

www.sahivsoc.org

New guidelines released May 2018

www.pulmonology.co.za

A updated guideline released in 2017

Guidelines for the vaccination of HIV-infected adolescents and adults In South Africa presented to the National Advisory Group on Immunisation (NAGI) of South Africa in May 2018

Table 1 Summary of advisory group recommendations for inactivated vaccines with broad indications for HIV-infected adults

Vaccine	WHO [6, 7]	UK [8]	Europe [12]	France [14]	US [9–11, 13]
Pneumococcal	Not recommended in resource-limited settings	Recommended for all patients. Use PCV-13 (one dose) regardless of HIV control. PPV recommended only for those with additional risk factors which include: ·Age >65 years old ·Younger adults with concurrent comorbidity (e.g., asplenia) based on national program recommendations Dosed as 1 dose of PPV-23 with PPV-23 given ≥3 months after PCV-13 No repeat doses of PPV-23 or PCV-13 are advised	Recommended for all patients. Use PCV-13 (one dose) No repeat dosing advised	Recommended for all patients. Use PCV-13 and PPV-23 Previously unvaccinated: 1 dose of PCV-13 followed by PPV-23 at ≥2 months later Previously vaccinated with PPV-23: 1 dose of PCV-13 at ≥3 years followed 2 months later with 1 dose of PPV-23	Recommended for all patients. Use PCV-13 and PPV-23 Previously unvaccinated: 1 dose of PCV-13 followed by 1 dose of PPV-23 at ≥8 weeks later (preferably when CD4 count ≥200 cells/mm^3). Repeat PPV-23 dose 5 years later Previously vaccinated with PPV-23, give PCV-13 at ≥1 year later followed by PPV-23 at 5 years later

Infect Dis Ther 2017; 6:303-331

PCD

- 14-year-old female HIV +ve patient on ART- TLD
  - CD4+ count 450 cells/L
  - VL <50 cps/mL
  - No other medical conditions

- **Which vaccines are indicated in this patient?**

- **How many vaccines can be given at the same time?**

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- **Tetanus-diphtheria (Td)**
  - Vaccinated irrespective of CD4+ count
  - Booster vaccine every 10 years (until more data available)

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- **Human papilloma virus**
  - In SA HPV- preteen girls 9-13 yrs- regardless of HIV status
  - Recommended for all HIV-infected adult men (**MSM**) & **women**,
  - Can be given regardless of CD4+ count, ART use or viral load

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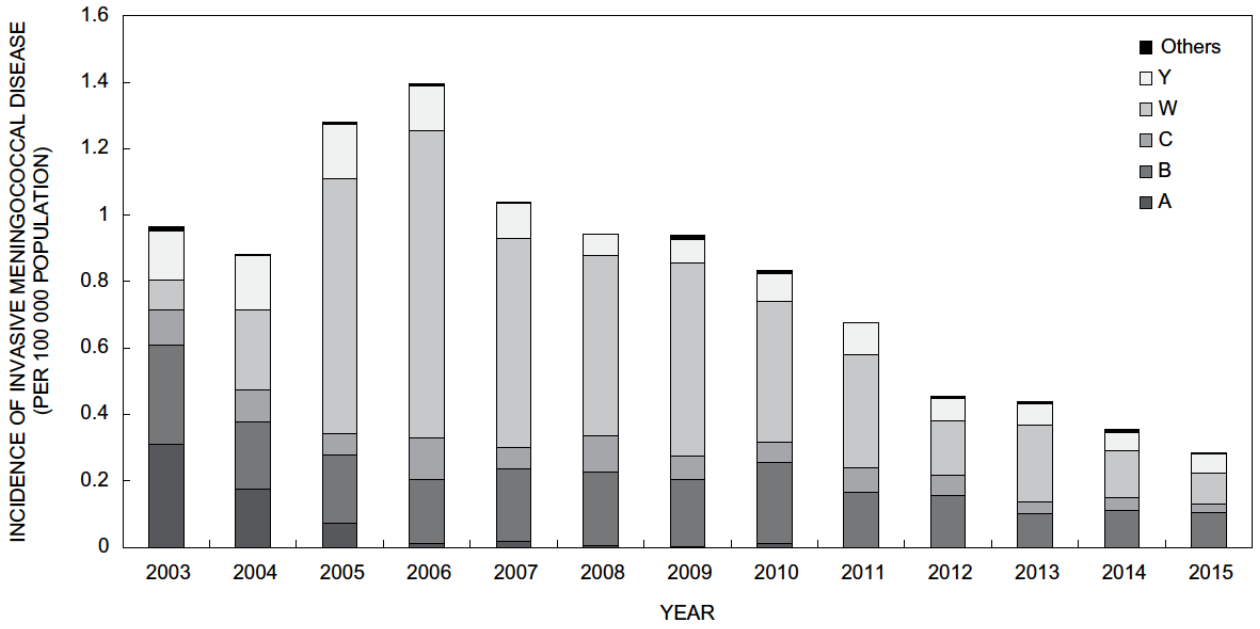
- **Meningococcal**
  - Should be considered
  - 2 dose schedule (12 weeks apart)
  - Booster every 5 years



S Afr J HIV Med 2018; 19(1)

Safety and Immunogenicity of an Adjuvanted Herpes Zoster Subunit Candidate Vaccine in HIV-Infected Adults: A Phase 1/2a Randomized, Placebo-Controlled Study

The Journal of Infectious Diseases® 2015;211:1279–87

SHINGRIX
(ZOSTER VACCINE RECOMBINANT, ADJUVANTED)

ZOSTAVAX®
Zoster Vaccine Live

Zostavax® is Generally Safe and Immunogenic in HIV-Infected Adults with CD4 Counts ≥200 Cells/µL Virologically Suppressed on ART: Results of a Phase 2, Randomized, Placebo-Controlled Trial

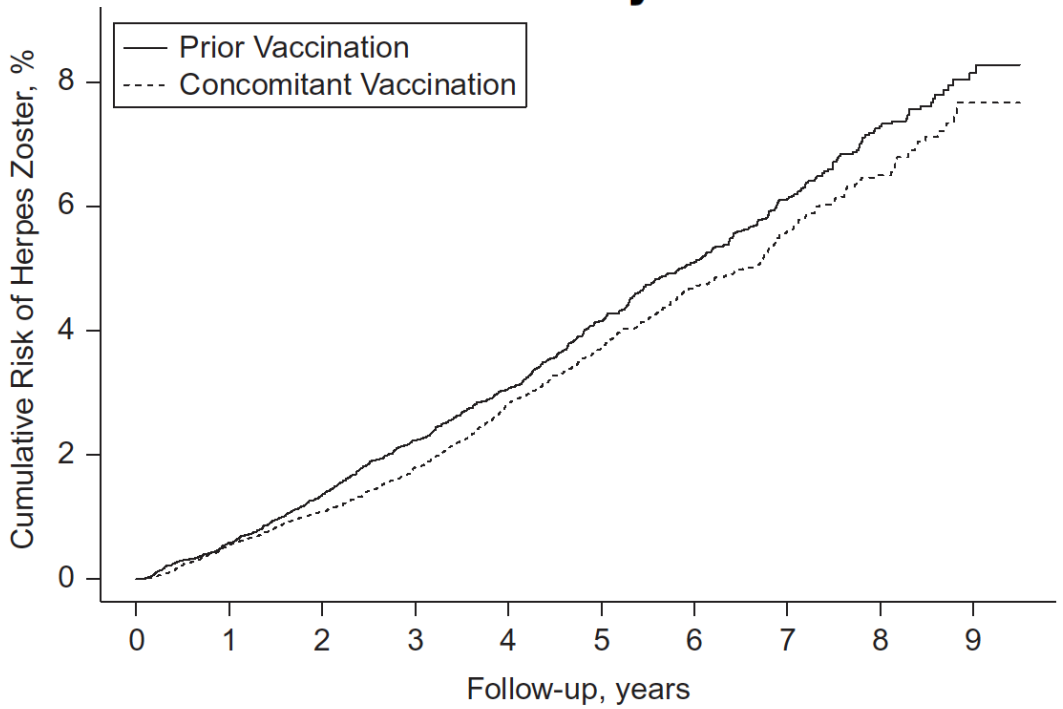
CA Benson, L Hua, JW Anderson, JH Jiang, DR Bozzolo, K Bergstrom, PW Annunziato, SW Read, R Pollard, D Rusin, J Lennox

for the ACTG A5247 Team

Abstract #96

- Benefits of zoster vaccine
  - Reduce incidence of shingles
  - Reduce severity of disease
  - Reduce occurrence of post-herpetic neuralgia
- Concerns that remain
  - Lack of data on ideal dosing schedule
  - Safety & efficacy

Real-World Evidence for Regulatory Decisions: Concomitant Administration of Zoster Vaccine Live and Pneumococcal Polysaccharide Vaccine



- Results from this study suggest no evidence of a diminished VZV immune response following concomitant administration of ZVL with PPSV23.

- Concomitant vaccination is recommended to minimize barriers to patients & providers & improve vaccination coverage

American Journal of Epidemiology. 2018; 187(9): 1856-1862

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Protected Together
#VACCINESWORK
WORLD IMMUNIZATION WEEK 2018

Vaccine advocacy

- Advocacy is all about change:
  - Changed attitudes
  - Behaviour
  - Policies
  - Practices
  - Bridging the gap from problem to solution
- **What we need to ask in South Africa is:**
  - What **CHANGE** is needed?
  - Who can make the **CHANGE** happen?
  - How do we persuade for **CHANGE**?

Protected Together
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Intervention strategies to increase adult vaccination rates

- **Pillar 1:** Convenient vaccination services
- **Pillar 2:** Communication with patients about importance of vaccination and the availability of vaccines
- **Pillar 3:** Enhanced office systems to facilitate adult vaccination
- **Pillar 4:** Motivation through an office immunization champion

BMC Infectious Diseases (2016) 16:23

Conclusion

- Are opportunities to expand immunization for HIV-infected Adolescents & Adults
- Vaccinate during stable disease
- Communicate with patients about the importance of vaccination and the availability of vaccines
- Vaccination is the most cost effective intervention of 21st century

THANK YOU!


SOUTHERN AFRICAN HIV
CLINICIANS SOCIETY
CONFERENCE
2018
24 - 27 OCTOBER