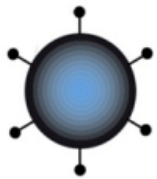


Vaccination in real life

"How to improve the benefits of vaccination among PLWHIV ?"

Nicolas Dauby
CHU Saint-Pierre HIV Reference Cen



BREACH
BELGIAN RESEARCH **AIDS&HIV** CONSORTIUM

8th Spring Meeting
Friday May 16th & Saturday May 17th
2025



Some notes from yesterday

- Trust needs time
- Communication is a keystone to collaborate and to prevent
- Listening takes time
- Opportunities
- Consistency



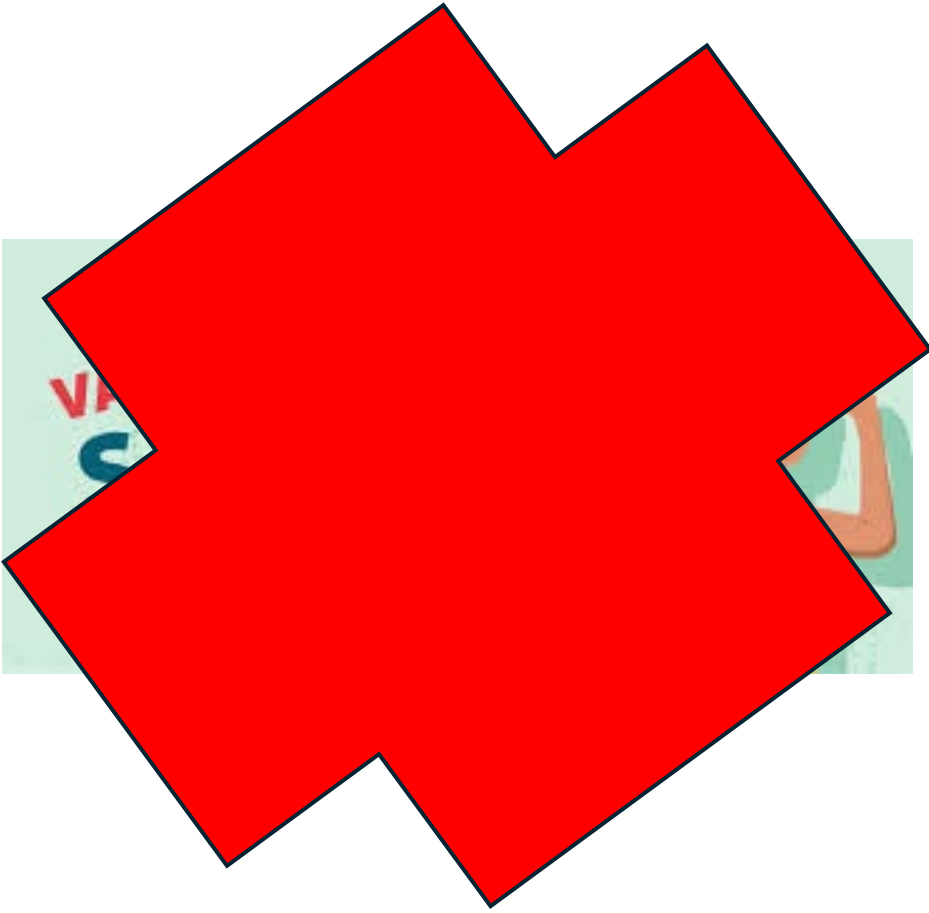
WHEN SOMEONE TELLS ME

**THEY ARE NOT UP TO DATE ON
RECOMMENDED VACCINES**

Vaccines versus vaccination



Vaccines versus vaccination



Public Health Nightmare

Vaccines without vaccination

"Thoughts and prayer" for a child deceased because of measles



On an unusually crisp April day in a rural Texas town, dozens of Mennonite community members gathered alongside the nation's top health official, Robert F Kennedy Jr, to mourn the death of an eight-year-old.

Daisy Hildebrand is the second unvaccinated girl from the community to die from measles in two months.

In one of several Mennonite-owned natural-health stores in Seminole, dozens of bottles of cod liver oil - a supplement that contains vitamin A - are on display. Alongside the vaccine, Kennedy has promoted vitamin A as an alternative measles treatment, a remedy doctors say should not be given without guidance from a physician and is no substitute for the vaccine.



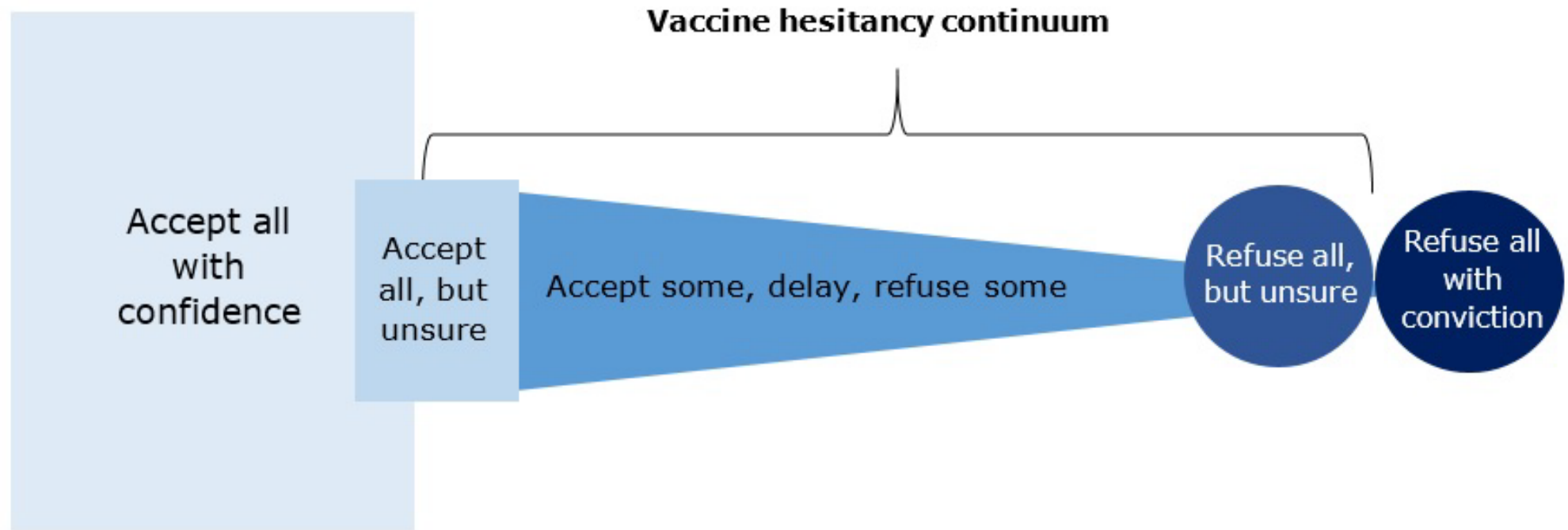
Vitamin A is sometimes used to help treat measles - but should not be given without a physician's guidance

"Vaccine fatigue" in PLWH : impact of the COVID-19 pandemic

Number of vaccines offered
and refused at each visit
195 outpatients with HIV
18 months Pre and Post
release of the COVID vaccines

| Vaccine | Rank Direction | p value |
|--------------|-----------------------------------|---------|
| Pneumonia | More refusals post-Covid | 0.026 |
| Influenza | More refusals post-Covid | 0.054 |
| Tetanus | More refusals post-Covid | 0.263 |
| Hepatitis A | Refusals equal pre-and post-Covid | 0.850 |
| Hepatitis B | More refusals post-Covid | 0.035 |
| Shingles | More refusals post-Covid | <0.001 |
| All Vaccines | More refusals post-Covid | <0.001 |

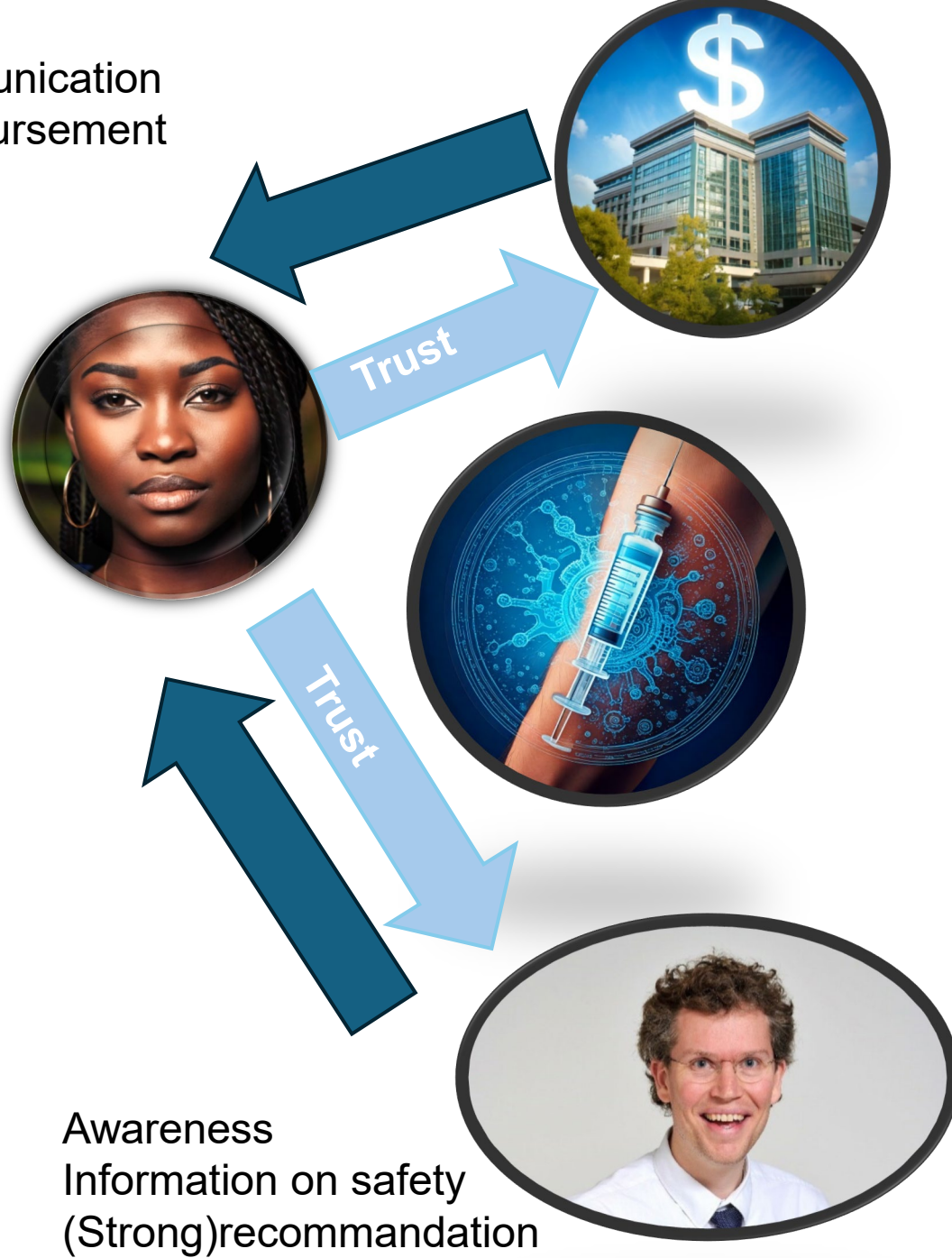
Vaccine hesitant patient : a continuum







Communication
Reimbursement



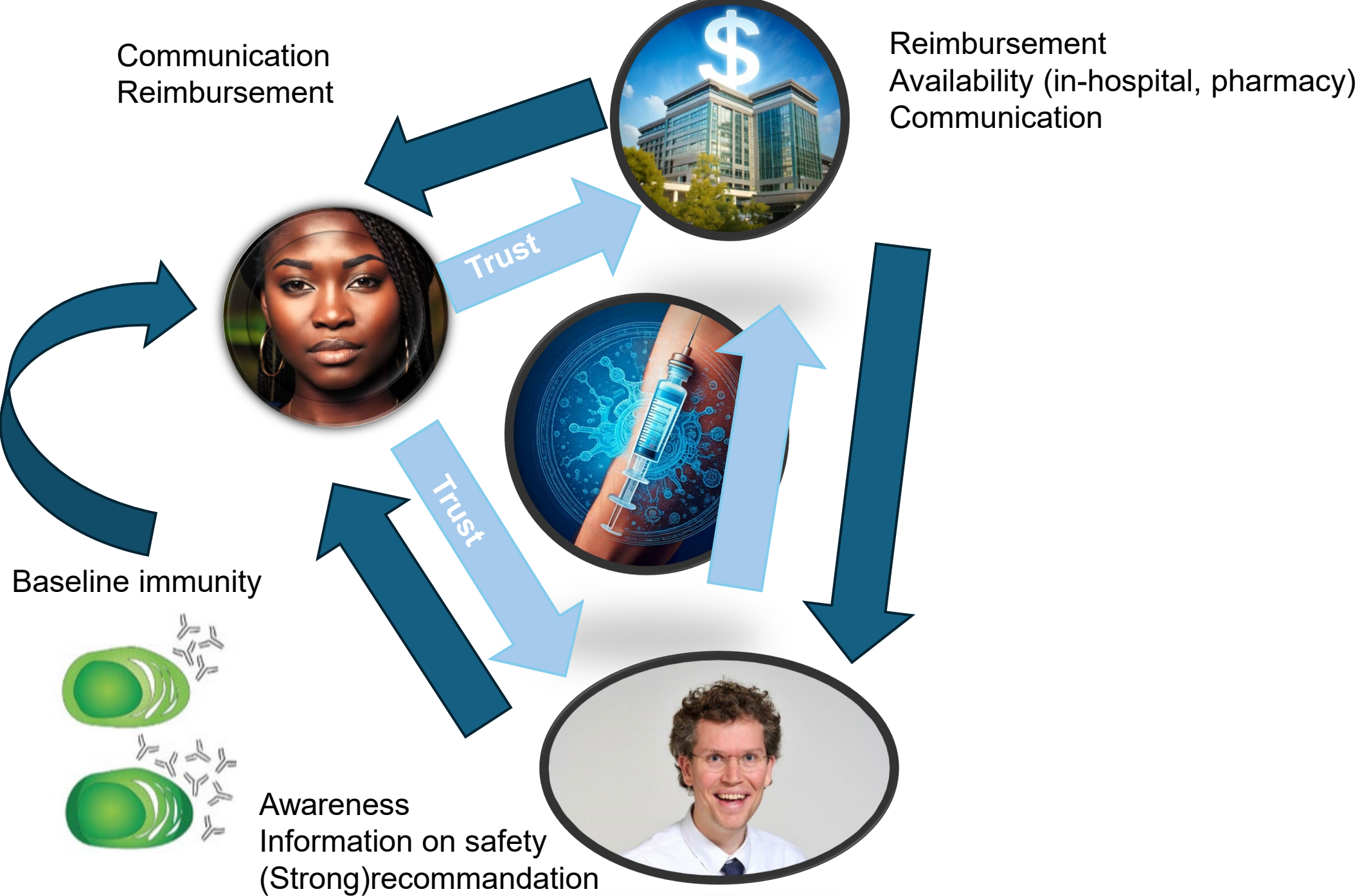
Awareness
Information on safety
(Strong)recommandation

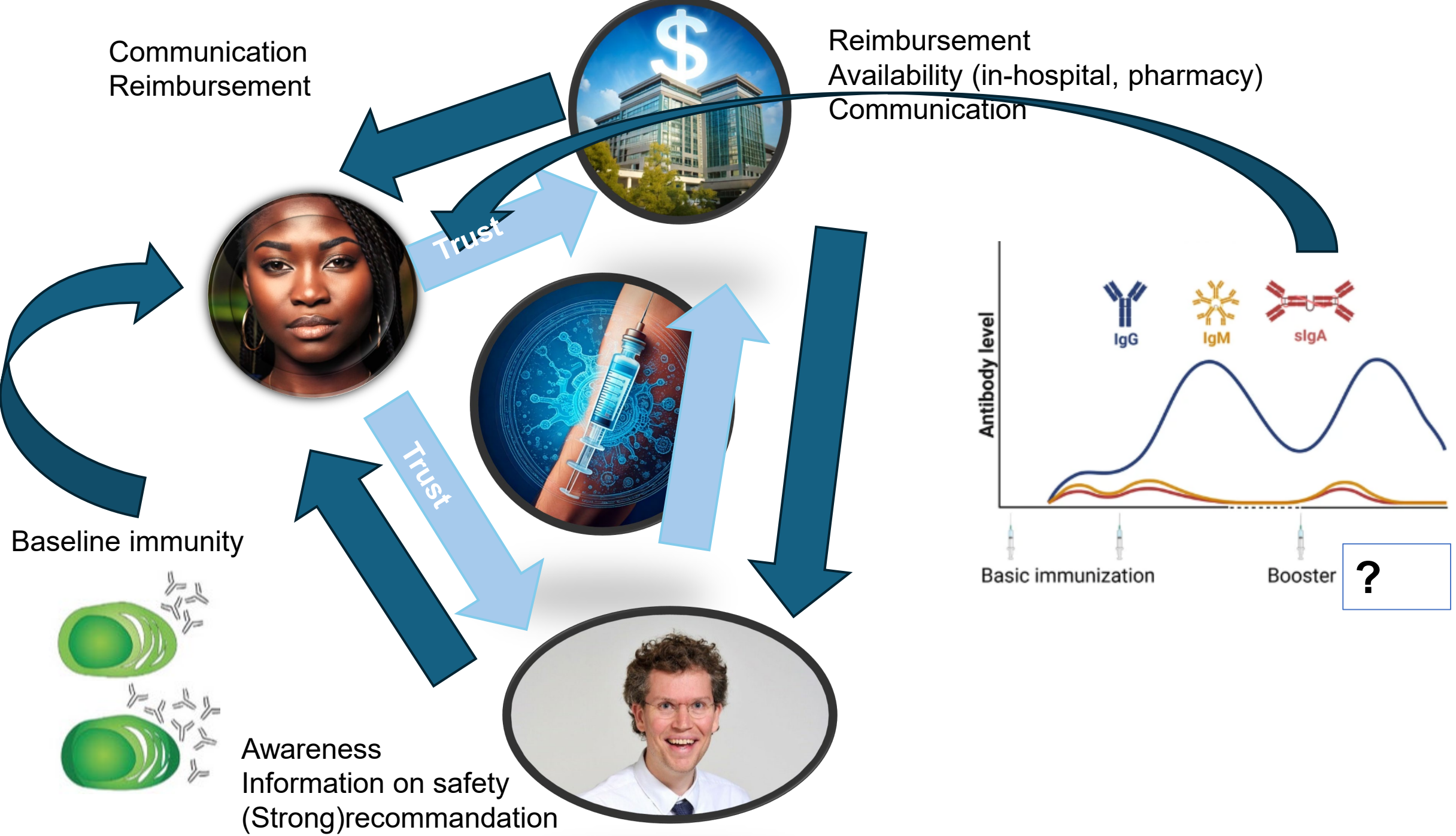
Communication
Reimbursement

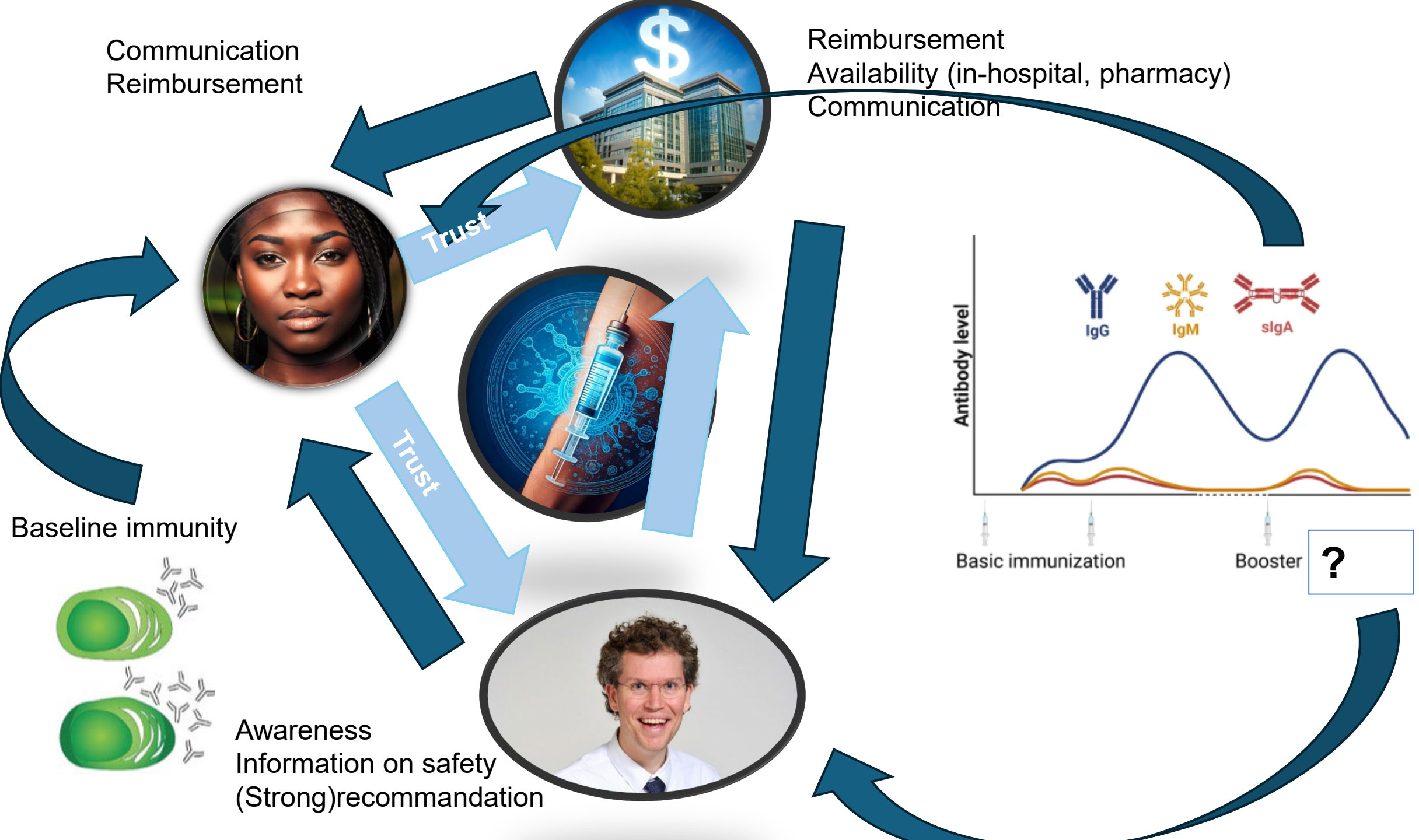
Reimbursement
Availability (in-hospital, pharmacy)
Communication



Awareness
Information on safety
(Strong)recommandation







**ÊTES-VOUS
AWARE ?**



Importance of patient's education Awareness of vaccine benefits improves acceptance of flu vaccination



HUMAN VACCINES & IMMUNOTHERAPEUTICS
2022, VOL. 18, NO. 5, e2046434 (7 pages)
<https://doi.org/10.1080/21645515.2022.2046434>



RESEARCH PAPER

OPEN ACCESS Check for updates

Explorative study regarding influenza vaccine hesitancy among HIV-infected patients

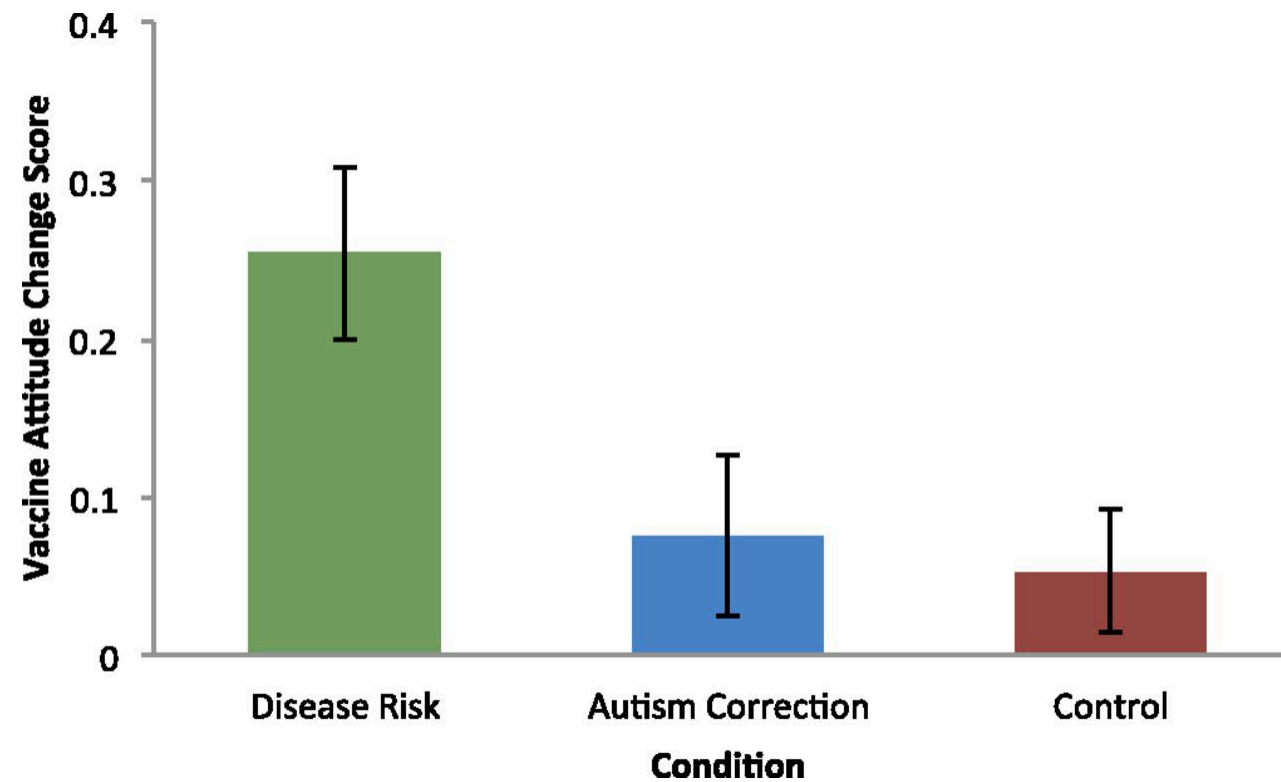
Valentina Marchese , Samuele Storti, Claudia Morganti, Giorgio Tiecco, Melania Degli Antoni, Emanuele Focà ,
Francesco Castelli, and Eugenia Quiros-Roldan

Department of Infectious and Tropical Diseases, University of Brescia and ASST Spedali Civili of Brescia, Brescia, Italy

Table 2. Beliefs in our population, classified per adherence to previous influenza vaccine seasonal campaigns.

| | Fully Adherent (n=117, 53.4) | Non- fully adherent (n=102, 46.6) | Total (n=219) | <i>p-value</i> |
|--|------------------------------|-----------------------------------|---------------|----------------|
| Protection from severe forms of influenza (n,%) | 103 (88) | 69 (67.6) | 172 (78.5) | <.001 |
| Induction of CD4 T cell increase vaccination-related (n,%) | 67 (57.3) | 41 (40.2) | 108 (49.3) | .015 |
| Effectiveness on COVID-19 disease (n,%) | 28 (23.9) | 22 (21.6) | 50 (22.8) | .7 |
| Fear of the difficulty of SARS-CoV2-influenza differential diagnosis (n,%) | 55 (47) | 57 (55.9) | 112 (51.1) | .2 |
| Recommendation from healthcare professionals (n,%) | 66 (56.4) | 45 (44.1) | 111 (50.7) | .079 |

Highlighting factual information about the dangers of communicable diseases can positively impact people's attitudes to vaccination.



Health benefits of maternal immunization are often referred to by women living with HIV

Mixed-methods study, 20 WLWH with a history of pregnancy

Motivation for acceptance of vaccine during pregnancy

Hesitancy was driven by concerns about safety or lack of information.

Most trusted Health care provider : HIV physician





Preventive Medicine Reports

Volume 54, June 2025, 103107



Experience of maternal immunization among women living with HIV in Belgium: A mixed-methods study ☆

Yama Touré^a, Charlotte Martin^a, Coca Necsoi^a, Marc Delforge^a, Déborah Konopnicki^a, Nicolas Dauby^{a b}  

“Immunization protects the mother and the baby.” Age 37-Gabon

“To help your pregnancy run successfully.” Age 41-Cameroon

“If it could help me and the baby.” Age 49-Zambia

“To protect the baby and the mom” Age 38-Cameroun

“To protect the child and myself, all mothers do that” Age 34-Guinea

“Probably needed following medical advice” Age 47-Cameroun

“Protect myself and the baby too” -Democratic Republic of the Congo

Importance of global vaccine confidence

Results from a survey about zoster vaccine acceptance, CHU Saint-Pierre (2022-2023)



| | Agree | Do not agree/do not know | OR | 95%CI |
|--|----------------|--------------------------|------|------------|
| | n=201 | n=126 | | |
| Mean age (years) | 48.3 | 50.1 | | |
| Male | 160 (79.6) | 79 (62.7) | | |
| Education level | | | | |
| - Graduate studies | 116/198 (58.6) | 55/124 (44.4) | | |
| - Secondary/primary school or unschooled | 82/198 (41.4) | 69/124 (55.6) | | |
| Ethnicity | | | | |
| - Sub-Saharan African | 55 (27.4) | 46/124 (37.1) | | |
| - Non Sub-Saharan African | 146 (72.6) | 78/124 (62.9) | | |
| MSM | 120/145 (82.8) | 53/66 (80.3) | | |
| Underlying chronic disease | 54/199 (27.1) | 23/124 (18.5) | | |
| | | | | |
| Personal history of varicella | 125 (62.2) | 70 (55.6) | | |
| Personal history of herpes zoster | 57/193 (29.5) | 23/122 (18.9) | | |
| Patients who know what herpes zoster is | 135/199 (67.8) | 70/121 (57.9) | | |
| People who know a relative with a history of herpes zoster | 73/166 (44.0) | 36/103 (35.0) | | |
| People who know herpes zoster vaccine | 29 (14.4) | 13 (10.3) | | |
| People who think vaccination is a good prevention tool against herpes zoster | 73/193 (37.8) | 54/120 (45.0) | | |
| People who are in favour of vaccination | 173/193 (90.1) | 62/113 (54.9) | | |
| People who agree to be vaccinated (any vaccine) | 176/193 (91.2) | 22/119 (18.5) | 57.7 | 19.9-167.6 |
| People who are vaccinated against COVID-19 | 189/195 (96.9) | 98/121 (81.0) | | |

OR : odds ratio, CI : confidence interval, MSM : men having sex with men

Predictors of general vaccination acceptance among PLWHIV, CHU Saint-Pierre (2022-2023)



Table 3. Predictors of vaccination acceptance – studied variables and results from multivariate analysis

| | Favors vaccination | Against vaccination/do not know | OR | 95%CI |
|--|--------------------|---------------------------------|------|----------|
| | n=235 | n=70 | | |
| Age (mean) | 49.1 | 49.0 | | |
| Male | 187 (79.6) | 39 (55.7) | | |
| Sub-Saharan African | 59/234 (25.2) | 31/69 (44.9) | | |
| MSM | 141/170 (82.9) | 27/32 (84.4) | | |
| Graduate studies | 139/231 (60.2) | 29/69 (42.0) | | |
| Underlying chronic disease | 55/232 (23.7) | 18 (25.7) | | |
| People who think vaccination is a good prevention tool against infectious diseases | 222 (94.5) | 39 (55.7) | 10.4 | 4.8-22.6 |
| vaccinated against COVID-19 | 222/234 (94.9) | 54 (77.1) | | |

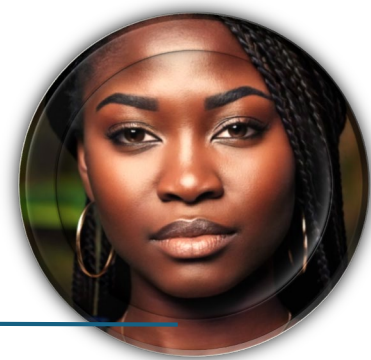
OR : odds ratio, CI : confidence interval, MSM : men having sex with men

A message tailored to the patient's background

Higher risk of tetanus seronegativity among PLWH with lower educational background, CHU

Saint-Pierre 2018-2019

Risk Factors for Tetanus seronegativity among 344 subjects living with HIV.



| Characteristics | ATA< 0.15 UI/mL n/total (%) | OR (IC 95) | p-value (Fisher test) | AOR (IC 95) | p-value |
|--|-----------------------------|-----------------|-----------------------|-------------|--------------|
| Age | | | | | |
| - <50 years old | 26/203 (12.8) | 0.65 | 0.17 | | |
| - > 50 years old | 26/141 (18.4) | [0.34- 1.23] | | | |
| Sex | | | | | |
| - Male | 25/232 (10.8) | 0.38 | 0.002 | 1.67 | 0.14 |
| - Female | 27/112 (24.1) | (0.12-0.73) | | (0.84-3.29) | |
| Recent pregnancy (<5 years) | | | | | |
| - < 5 years | 1/15 (6.7) | 0.20 | 0.11 | | |
| No recent pregnancy | 26/97 (26.80) | [0.004- 1.42] | | | |
| Birthplace | | | | | |
| - Europe | 13/164 (7.9) | 3.20 | 0.0004 | 3.02 | 0.007 |
| - Outside Europe | 39/180 (21.7) | (1.59-6.82) | | (1.35-6.76) | |
| Arrival date in Belgium for non-Europeans | | | | | |
| - < 5 years | 5/29 (17.2) | 1.39(0.47-5.02) | 0.63 | | |
| - > 5 years | 34/151 (22.5) | | | | |
| Level of education | | | | | |
| - No university | 37/183 (20.2) | 0.41 | 0.006 | 2.35 | 0.02 |
| - University | 15/161 (9.3) | (0.20-0.80) | | (1.14-4.85) | |
| Health Insurance Coverage | | | | | |
| - Yes | 45/313 (14.4) | 0.58 | 0.29 | | |
| - No | 7/31 (22.6) | [0.22-1.68] | | | |



Sociodemographic and socioeconomic disparities in COVID-19 vaccine uptake in Belgium: a nationwide record linkage study

Lisa Cavillot ^{1,2} Joris A F van Loenhout,¹ Brecht Devleesschauwer,^{1,3} Chloé Wyndham-Thomas,¹ Herman¹ Laura Van den Borre,^{1,5} Matthieu Bil Veerle Stouten,¹ Lucy Catteau,¹ Pier

Table 2 Adjusted odds ratios (ORs) and their 95% confidence intervals (CIs) for the association between sociodemographic and socioeconomic characteristics and the odds of not having received a first dose of COVID-19 vaccine, Belgium, 28 December 2020 to 31 August 2021


| Variables | Model 1* | Model 2† | Model 3‡ |
|--|----------------------|----------------------|----------------------|
| | Adjusted OR (95% CI) | Adjusted OR (95% CI) | Adjusted OR (95% CI) |
| Age groups | | | |
| 18–24 | 4.78 (4.66 – 4.89) | – | – |
| 25–34 | 5.49 (5.37 – 5.62) | 5.98 (5.84 – 6.12) | 2.75 (2.71 – 2.78) |
| 35–44 | 3.89 (3.80 – 3.99) | 4.22 (4.12 – 4.32) | 1.97 (1.94 – 1.99) |
| 45–54 | 2.67 (2.60 – 2.73) | 2.83 (2.76 – 2.90) | 1.34 (1.32 – 1.36) |
| 55–64 | 2.15 (2.10 – 2.21) | 2.23 (2.18 – 2.29) | 1.00 |
| 65–74 | 1.43 (1.40 – 1.47) | 1.47 (1.43 – 1.51) | – |
| 75–84 | 1.00 | 1.00 | – |
| 85+ | 1.19 (1.14 – 1.23) | 1.15 (1.11 – 1.20) | – |
| Sex | | | |
| Women | 1.00 | 1.00 | 1.00 |
| Men | 1.05 (1.04 – 1.06) | 0.99 (0.98 – 1.00) | 1.07 (1.06 – 1.07) |
| Regions | | | |
| Flemish | 1.00 | 1.00 | 1.00 |
| Brussels | 1.80 (1.78 – 1.81) | 1.76 (1.74 – 1.78) | 1.77 (1.75 – 1.78) |
| Walloon | 1.63 (1.62 – 1.64) | 1.67 (1.66 – 1.68) | 1.67 (1.66 – 1.68) |
| Migration background | | | |
| Belgian natives | 1.00 | 1.00 | 1.00 |
| Second-generation migrants | 2.25 (2.23 – 2.28) | 1.94 (1.91 – 1.96) | 2.12 (2.09 – 2.15) |
| First-generation European migrants | 2.90 (2.88 – 2.93) | 2.64 (2.62 – 2.67) | 3.10 (3.07 – 3.13) |
| First-generation non-European migrants | 2.98 (2.95 – 3.00) | 2.76 (2.73 – 2.78) | 3.45 (3.42 – 3.48) |

WHAT THIS STUDY ADDS

⇒ Thanks to a unique individual data linkage allowing the use of a large and representative study population (N=5 342 110), a significant lower COVID-19 vaccination coverage was identified among socioeconomically disadvantaged groups in Belgium and within each Belgian region.



Sociodemographic and socioeconomic disparities in COVID-19 vaccine uptake in Belgium: a nationwide record linkage study

Lisa Cavillot ^{1,2}, Joris A F van Loenhout,¹ Brecht Devleesschauwer,^{1,3} Chloé Wyndham-Thomas,¹ Herman Van Oyen,^{1,4} Jinane Ghattas,^{1,2} Koen Blot,¹ Laura Van den Borre,^{1,5} Matthieu Billuart,¹ Niko Speybroeck,² Robby De Pauw,^{1,6} Veerle Stouten,¹ Lucy Catteau,¹ Pierre Hubin¹

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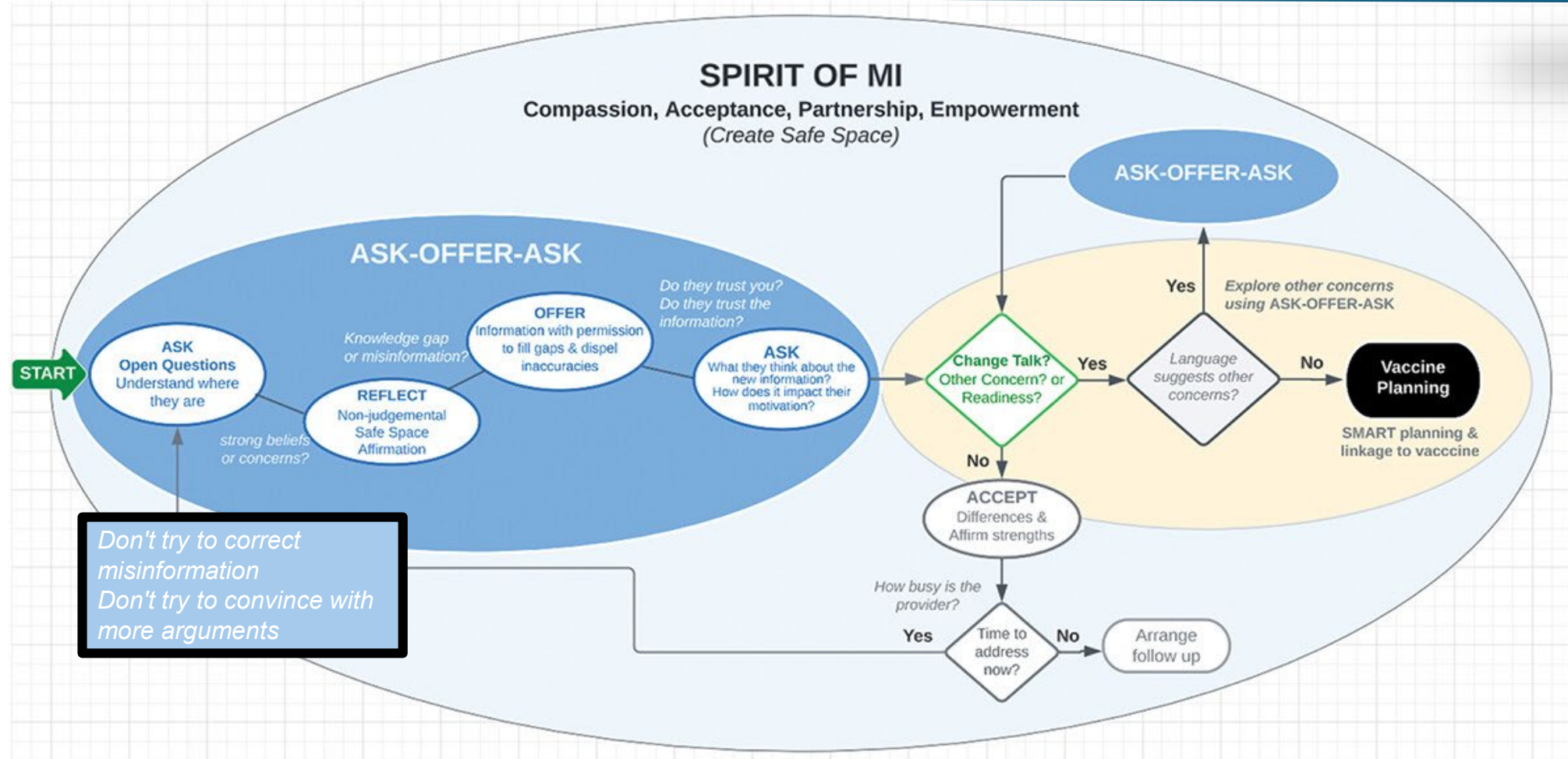
| | | | |
|-------------------|--------------------|--------------------|--------------------|
| Income | | | |
| High | 1.00 | 1.00 | – |
| Moderate | 1.54 (1.52 – 1.55) | 1.44 (1.43 – 1.46) | – |
| Low | 2.36 (2.34 – 2.38) | 2.08 (2.06 – 2.10) | – |
| Missing | 1.93 (1.89 – 1.96) | 1.68 (1.65 – 1.71) | – |
| Education level | | | |
| High | – | 1.00 | – |
| Moderate | – | 1.31 (1.30 – 1.32) | – |
| Low | – | 1.37 (1.36 – 1.39) | – |
| Missing | – | 1.19 (1.18 – 1.21) | – |
| Healthcare degree | | | |
| Yes | – | 1.00 | – |
| No | – | 1.41 (1.39 – 1.43) | – |
| Employment status | | | |
| Employed | – | – | 1.00 |
| Unemployed | – | – | 1.46 (1.45 – 1.47) |
| Missing | – | – | 1.16 (1.13 – 1.18) |





Motivational interview

An evidence-based strategy for vaccine counseling



A patient is reluctant to be vaccinated against shingles. He is living with HIV and is 70 years old. He also suffers from diabetes. How would you convince him to be vaccinated using a motivational interview strategy ?



Using a motivational interviewing approach to encourage the patient to get the shingles vaccine involves empathetic communication, exploring his concerns, and highlighting the benefits. Here's an example of how you might approach it:

1. Build rapport and express understanding:

"I understand that making decisions about vaccines can be complex, especially given your health conditions. It's completely normal to have questions or concerns."

2. Explore his perspective:

"Can you tell me what you know or feel about the shingles vaccine? Are there specific worries or reasons you're hesitant?"

3. Reflect and validate feelings:

"It sounds like you're concerned about how the vaccine might affect your health, especially with HIV and diabetes."

4. Provide tailored information and clarify misconceptions:

"The shingles vaccine is generally safe for people with HIV and for those your age. It can actually help prevent a painful condition called shingles, which you might be at increased risk for given your age and health conditions."

5. Emphasize the benefits and address risks:

"Getting vaccinated could significantly reduce your chances of experiencing severe shingles, which can cause lasting pain and complications. Considering your HIV status and diabetes, protecting yourself from additional illnesses is especially important."

6. Support autonomy and decision-making:

"Ultimately, the decision is yours, and I'm here to support whatever choice you make. Would it help to discuss any other concerns or questions you have?"

Differential vaccine coverage among PLWH in France and Greece : an impact of vaccine availability?



| | France (Saint-Etienne) | Greece (Thessaloniki) |
|---------------------|--------------------------------------|-------------------------------------|
| | 561 | 1210 |
| Pneumococcus | 20% | 79% |
| Hepatitis A | 23.7% | 73.6% |
| Hepatitis B | 63.5% | 73.6% |
| Influenza | 40.1% | 39% |
| Costs | Free of charge(city pharmacy) | Free of charge (in-hospital) |

outpatient clinic :experience with MIA center – CHU Saint- Pierre

15 Vaccines available on site :

- Hepatitis A / B (Engerix ® & Fendrix ® ; Twinrix ®)
- PCV20
- Shingrix ®
- Gardasil 9 ®
- Influenza during season
- Imovax Polio (travellers)
- Jynneos ®
- Nimenrix ®
- Pneumovax 23 ®
- Priorix ® (MMR)
- Stamaril ®

Vaccination may be performed directly after the HIV physician's visit



Shingrix ® coverage among people living with HIV, CHU Saint-Pierre, 2022-2025

At least one dose of Shingrix ®

- 378/4109 patients (9.2%)
- Median age 61.8 (IQR 55-67)

Among 50+ :

- 329/2030 (16,2%)

Among 60+

- 227/986 (23%)

Shingrix® coverage among people living with HIV, CHU Saint-Pierre 2022-2025

At le
- 378
- Me

Amo
- 329

Amo
- 227



The standards for adult immunization practice

- **ASSESS** immunization status of all patients in every clinical encounter
- **RECOMMEND** strongly the vaccines that patients need
- **ADMINISTER** needed vaccines or **REFER** to a provider who can immunize, and
- **DOCUMENT** vaccines administered or received by patients.

A 2-doses schedule with Gardasil is non-inferior to a 3 doses schedule with less reactogenicity

JOURNAL ARTICLE ACCEPTED MANUSCRIPT

Immunogenicity and safety of two versus three doses of 9-valent vaccine against Human papillomavirus (HPV) in women with HIV: the Papillon randomized trial

[Get access >](#)

Deborah Konopnicki ✉, Christine Gilles, Yannick Manigart, Patricia Barlow, Anca Reschner, Coca Necsoi, Marc Delforge, Davy Vanden Broeck, Nicolas Dauby, Stéphane De Wit

Clinical Infectious Diseases, ciaf241, <https://doi.org/10.1093/cid/ciaf241>

Published: 13 May 2025 **Article history** ▼

Abstract

Background

WHO recommends 2 doses of HPV vaccine for adults without HIV but 3 doses in persons with HIV. There are no immunogenicity data on the 2 doses schedule in women with HIV (WWH).

Results

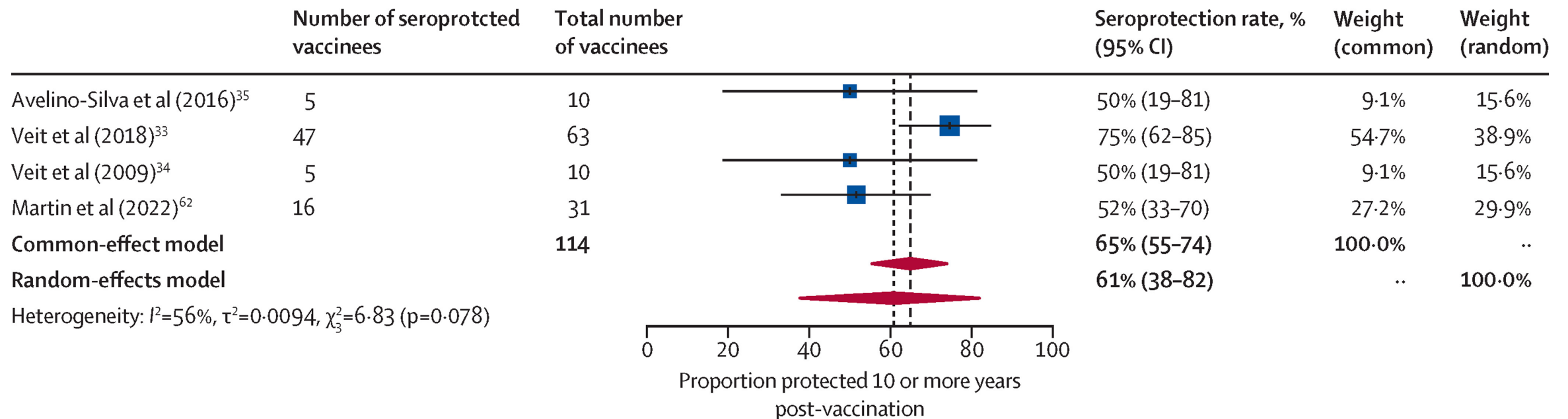
Median age was 35 years, median CD4 count 649/ μ L, 16 missed M7 visit. In mITT, seroconversion was 97.7% for 2 doses and 97.9% for 3 doses, meeting the predefined non-inferiority criteria. At M7, antibodies titers against all vaccine genotypes were high in both groups (increase by 1.2-2.4 \log_{10}). There was no serious adverse event; participants with 3 doses experienced local reaction more frequently (82% versus 60% for 2 doses, $p=0.027$) with significantly more symptoms and longer duration.

Conclusions

In women with well-controlled HIV, 2 doses of HPV 9v-vaccine is non-inferior to 3 doses in terms of seroconversion and is associated with less reactogenicity.

Importance of a second dose of yellow fever vaccine for long term protection among PLWHIV

D



Pooled seroprotection rate 61% (38-82) at 10 years

A second dose of yellow fever vaccine is recommended for PLWHIV (Superior Health Council advice)

Vaccination in real life

How to improve the benefits of vaccination among PLWHIV ?

- Proactive and recurrent communication, strong recommendation and transparency about the benefits (and the risk) of vaccination is key to increase acceptance
 - Tailored to the specificity of the patient (education, cultural background)
- Motivational interview is an evidence-based approach
- Availability of vaccines at the outpatient clinic is probably key for an optimal uptake (along with reimbursement)
 - Continue the lobby for the reimbursement of different vaccines
- More data are required on the need or not of additional doses in (subgroups) of PLWHIV