ICASA 2021

Paving the way to access to long-acting technologies

Satellite symposium co-hosted by medicines patent pool

Unitaid

Moderated by Lobna Gaayeb & Cherise Scott

December 2021
Long-acting technologies
Additional options, with many advantages

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Opportunities</th>
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<tr>
<td>- Pill burden</td>
<td>- Simplified dosing</td>
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<tr>
<td>- Stigma</td>
<td>- Less frequent administrations</td>
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<tr>
<td></td>
<td>- Optimized regimen</td>
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<tr>
<td>→ Less adherence &amp; retention in care</td>
<td>→ Address mental burden</td>
</tr>
<tr>
<td>→ Barrier to viral suppression</td>
<td>→ Address stigma</td>
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<tr>
<td>→ Sustained transmission</td>
<td>→ Optimized use of resources</td>
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Long-acting drug delivery technologies could support Global Health and Universal Health Coverage goals

How can we support access to them?
FOR TOO MANY, HEALTH IS **INACCESSIBLE, UNAFFORDABLE OR ALTOGETHER UNAVAILABLE**

100 MILLION PEOPLE

each year, worldwide, are driven into poverty because **HEALTHCARE COSTS ARE TOO HIGH**
The MPP model: how we work

COMPETITION BETWEEN GENERICs BRINGS PRICES DOWN AND MORE PEOPLE GAIN ACCESS TO THE MEDICINES THEY NEED

- Accelerate development of better-adapted formulations
- Prioritise medicines
- Sublicense to generic pharmaceutical companies
- Negotiate with patent holders and sign licences

The MPP model: competition between generics brings prices down and more people gain access to the medicines they need.
The Medicines Patent Pool has signed a public-health oriented licence on a long-acting injectable for prevention and/or treatment of HIV developed by the University of Washington.

“1 injection to replace 30-90 pills”
Emerging multipurpose prevention technologies could help prevent unwanted pregnancies and multiple causes of mortality and morbidity.
Panelists

Prof. Quarraisha Abdool Karim
Associate Scientific Director: CAPRISA; Professor in Clinical Epidemiology: Columbia University and ProVice-Chancellor: African Health, University of KwaZulu-Natal

Mr. Yves Kugbe
The Long Acting Technologies Community Advisory Board

Dr. N. Kumarasamy
Director at the Infectious Diseases Medical Center and the Chennai Antiviral Research and Treatment Clinical Research Site

Dr. Siobhan Crowley
Head of HIV at The Global Fund to Fight AIDS, Tuberculosis & Malaria

Ms. Sandra Nobre
Head of Business Development at the Medicines Patent Pool

Concluding remarks
Key considerations for enhancing access to long-acting technologies

Prof. Quarraisha Abdool Karim

Associate Scientific Director: CAPRISA; Professor in Clinical Epidemiology: Columbia University and ProVice-Chancellor: African Health, University of KwaZulu-Natal
Enhancing uptake of long-acting HIV prevention technologies

UNITAID LAT Symposium, ICASA, Durban, December 2021

Quarraisha Abdool Karim, PhD
Associate Scientific Director: CAPRISA
Professor of Clinical Epidemiology, Columbia University
Pro Vice-Chancellor (African Health): University of KwaZulu-Natal
Co-Chair: UN 10 Member Technical Facilitation Mechanism
UNAIDS Ambassador for Adolescents and HIV
Overview

• Tribute to Zena Stein - initiating a journey from 1990-2021

• Global epidemic at a glance: Importance of Preventing HIV in Adolescents

• Social Challenge – gender power disparities – role of technology – first step

• Lessons from Covid-19
  – Political Leadership & Scientific Evidence - Options
  – Partnerships with Community - Choices
    • Users – behaviour, biology, context, no one size fits all
    • Providers at coalface – important gatekeepers and amplifiers

• Capacity building – manufacturing, regulatory, communication
Not a single HIV prevention technology for women!

Existing HIV prevention strategies - ABCC:
- Abstinence
- Behaviour (Be faithful)
- Condoms (Male & Female)
- Circumcision

Which of these are prevention tools for young women in Africa?
Long journey from topical microbicides to MPT technologies
Chemical agent applied to the vaginal or rectal mucosa with the intention of preventing the transmission of sexually transmitted infections including HIV and pregnancy

Microbicides containing antiretroviral drugs = Topical PrEP (Pre-exposure prophylaxis)
The Global HIV epidemic at a glance

Worldwide in 2020:
- 38 million living with HIV
- 690,000 HIV deaths
- 1.5 million new infections/± 4000 infections/day

Sub-Saharan Africa: 2/3 HIV infections; 1/4 infections in AGYW - MTCT
ESA: 3/5 HIV infections
South Africa: 1/5 HIV infections (uneven distribution)

Source: UNAIDS Global Report 2021
High rates of HIV among women in South Africa

Community-based HIV prevalence in KwaZulu-Natal, South Africa: results of a cross-sectional household survey

Ayesha B M Kharsany, Cherie Cawood, David Khanyile, Lara Lewis, Anneke Grobler, Adrian Purem, Kaymarlin Govender, Gavin George, Sean Beckett, Natasha Samsunder, Savathree Madurai, Carlos Toledo, Zawadi Chipeta, Mary Glenshaw, Sara Hersey, Qurraisha Abdoel Karim

Community survey in 9,812 men and women in a rural district, KwaZulu-Natal:

- Overall 36% HIV positive
- 44% in women vs 28% in men
The Cycle of HIV Transmission: Young women’s risk → men 25-34 years

<table>
<thead>
<tr>
<th>Women age group</th>
<th>Age difference with male partners</th>
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<tbody>
<tr>
<td>16-20</td>
<td>11.5 yrs</td>
</tr>
<tr>
<td>21-25</td>
<td>7.0 yrs</td>
</tr>
<tr>
<td>26-30</td>
<td>1.5 yrs</td>
</tr>
<tr>
<td>31-35</td>
<td>1.7 yrs</td>
</tr>
<tr>
<td>36-40</td>
<td>0.7 yrs</td>
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Get on the Fast-Track
The life-cycle approach to HIV

THE LANCET HIV
Transmission networks and risk of HIV infection in KwaZulu-Natal, South Africa: a community-wide phylogenetic study

INFECTION PATHWAY

- Very young women acquire HIV from men, on average, 8 years older
- High HIV incidence men mean age 27 years (range 25-35 years)
- Men and women > 24 years usually acquire HIV from similarly aged partners
- High HIV risk women mean age 18 years (range 16-23 years)
- High HIV prevalence women mean age 26 years (range 24-29 years)
- Time Cycle repeats itself
PrEP empowering women to prevent HIV: WHO guidelines to clinic-based provision of tenofovir for PrEP

Implementation of PrEP for HIV prevention in women - 2017

PrEP recommended as global standard for all at high risk in 2015
CAP008: Integration of PrEP into SRH services is feasible

Integrated provision of topical pre-exposure prophylaxis in routine family planning services in South Africa: a non-inferiority randomized controlled trial

Leila E Mansoor1,2, Nonhlathi Yende-Zuma1, Cheryl Baxter1, Kathryn T Mngadi1, Halima Dawood1, Tanuja N Gengiah1, Natasha Samsunder1, Jill I Schwartz2, Gustavo F Doncel2 and Quarraisha Abdool Karim1,3

<table>
<thead>
<tr>
<th></th>
<th>Intervention clinic (N=189) (95% CI)</th>
<th>Control clinic (N=183) (95% CI)</th>
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<tbody>
<tr>
<td>ADHERENCE</td>
<td></td>
<td></td>
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<tr>
<td>ITT: Mean returned used applicators/mth</td>
<td>5.2 (4.7–5.7)</td>
<td>5.7 (5.2–6.2)</td>
</tr>
<tr>
<td>Mean difference</td>
<td></td>
<td>-0.47 (–1.16 to 0.21)</td>
</tr>
<tr>
<td>Per-Protocol: Mean returned used applicators/mth</td>
<td>5.5 (5.0–6.1)</td>
<td>5.8 (5.3–6.3)</td>
</tr>
<tr>
<td>Mean difference</td>
<td></td>
<td>-0.25 (-0.98 to 0.48)</td>
</tr>
<tr>
<td>HIV INCIDENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV incidence per 100w-y</td>
<td>3.5 (1.8–6.0)</td>
<td>3.6 (1.9–6.3)</td>
</tr>
<tr>
<td>Incidence rate ratio</td>
<td></td>
<td>0.96 (0.40 to 2.35)</td>
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PrEP field: Towards longer acting, less user dependent technologies

- PrEP uptake constrained by the challenge: poor risk perception or acceptance of high risk
- PrEP awareness & acceptance & Self-efficacy to use PrEP
- Increasing PrEP coverage may need more than additional PrEP options
- Alternative approaches: Promote and provide at user choice venues
- Implementation studies increasingly important as the array of longer-acting PrEP options
### CAP251: STIs & HIV - implications for epidemic control

Population prevalence of sexually transmitted infections in a high HIV burden district in KwaZulu-Natal, South Africa: Implications for HIV epidemic control

Ayesha E.M. Kharsany\textsuperscript{a,b,c}, Lyle R. McKinnon\textsuperscript{a,c}, Lara Lewis\textsuperscript{a}, Cherie Cawood\textsuperscript{d}, David Khanyile\textsuperscript{d}, Domicled Venessa Maseko\textsuperscript{e}, Tawni C. Goodman\textsuperscript{a,f}, Sean Beckett\textsuperscript{f}, Kaymarlin Govender\textsuperscript{f}, Gavin George\textsuperscript{f}, Kassahun Abere Ayalew\textsuperscript{g}, Carlos Toledo\textsuperscript{g}

**Association of curable STIs and HIV positive status, CD4 cell count and HIV viral load**

<table>
<thead>
<tr>
<th></th>
<th>Males HIV pos / neg</th>
<th>Females HIV pos / neg</th>
<th>CD4 cell count &lt;350 vs ≥350 per µL</th>
<th>HIV viral load ≥ 400 vs &lt;400 copies per mL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjusted prevalence ratio (% CI)</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Syphilis</strong></td>
<td>1.15 (0.46-2.86)</td>
<td>2.54 (1.32-4.86)</td>
<td>1.26 (0.82-1.94)</td>
<td>1.71 (0.97-3.02)</td>
</tr>
<tr>
<td><strong>N. gonorrhoeae</strong></td>
<td>1.73 (0.67-4.50)</td>
<td>2.39 (1.62-3.52)</td>
<td>1.59 (1.00-2.52)</td>
<td>1.91 (1.36-2.70)</td>
</tr>
<tr>
<td><strong>C. trachomatis</strong></td>
<td>0.96 (0.57-1.63)</td>
<td>1.01 (0.82-1.25)</td>
<td>0.72 (0.47-1.11)</td>
<td>1.52 (1.12-2.05)</td>
</tr>
<tr>
<td><strong>T. vaginalis</strong></td>
<td>1.50 (0.93-2.41)</td>
<td>1.70 (1.43-2.01)</td>
<td>1.11 (0.92-1.35)</td>
<td>1.01 (0.83-1.21)</td>
</tr>
<tr>
<td><strong>M. genitalium</strong></td>
<td>1.49 (1.02-2.19)</td>
<td>1.60 (1.15-2.22)</td>
<td>2.01 (1.52-2.66)</td>
<td>1.82 (1.27-2.63)</td>
</tr>
</tbody>
</table>

**Public health implications of sustained onward transmission risk of STIs and HIV, threatening the goal to achieving HIV epidemic control in the region**
Vaginal bacteria / microbiome impact the efficacy of topical tenofovir

Women with **Lactobacillus** dominance

**Efficacy: 61%**

Women with **<50% Lactobacilli**

**Efficacy: 18%**
HPV, genital inflammation and HIV acquisition

HPV infection and the genital cytokine milieu in women at high risk of HIV acquisition

LENINE J.P. LIEBENBERG1,2,8*, LYLE R. MCKINNON1,2,3,8, NONHLANHLA YENDE-ZUMA1,8, NIGEL GARRETT1, CHERYL BAXTER1, AYESHA B.M. KARSANY1,2, DESEREEN ARCHARY1,2, ANNE ROSITCH4, NATASHA SAMSUNDER1, LEILA E. MANSOOR1, JO-ANN S. PASSMORE1,5,6, SALIM S. ABDool KARIM1,7 & QUARRAISHA ABDool KARIM1,7

HPV infection associated with a 2.5-fold increase in HIV acquisition risk

Increasing HPV vaccination coverage may carry an additional benefit of reducing the risk of contracting HIV.
Community engagement: “Do things with people - not on people” & “Nothing for us without us”
Community = Users and Providers at the Coalface
Decentralising SRH services: Taking Services to Young People

- **CAPRISA 072**: Novel approach providing SRH services to over 1441 AGYW in 5 High School in rural KZN
- SRH services provided a school through mobile and fixed clinics
- Weekly in-school group SRH information and awareness sessions;
- Peer ambassador programme to drive SRH uptake in schools
- Quarterly adolescent “boot-camps” were held to discuss SRH information.

**Key Lessons**
- **Peer-led demand creation is key for driving SRH uptake** - Post-implementation of peer ambassadors in May 2014, visits at the mobile clinic increased from an average of 4 visits/month, to an average of 37 visits/month. Peer-led demand creation is also a sustainable solution to support the uptake of SRH and future HIV prevention technologies
- **Seasons of Uptake and access** - when schools closed female adolescent visits to mobile and fixed SRH clinics decreased
- **Out of school Youth** – this significantly vulnerable group are missed by school programmes, peer programmes could help reach these groups
Integrating PrEP into SRH services: Lessons from rural KZN

• CAPRISA 084 provided oral PrEP PrEP to young women and men in rural KwaZulu-Natal
• Oral PrEP was provided as part of the SRH package of services via mobile and fixed clinic venues
• Aimed to develop a strategy to inform the public response and better access hard-to-reach groups

Key lessons
• Differentiated service models to support uptake and retention - 72.5% accessed PrEP through the mobile clinic, 27.5% through fixed clinic services
• Integration into SRH services – support confidentiality, decreases stigma of using HIV prevention services, and provides opportunity to identify and treat other SRH issues
• Mobile services engage men and adolescents – greater accessibility, longer service provision hours supported uptake, 40% of PrEP users were male, and 60% were female
The future of biomedical research on technologies to prevent HIV in women – no one size fits all/magic bullets

- **ARV rings** eg. Dapivirine
- **Injectable ARVs**: Cabotegravir & Rilpivirine, Lenacapavir
- **F/TAF Islatravir**
- **Implants**: TAF, Islatravir, Cabotegravir
- **Multi-purpose technologies**
- **Potential future prevention technologies**
- **Combination Broadly Neutralising Antibodies**
- **HIV vaccines**
- **Altering the vaginal microbiome - Treat BV & Lactin-V**
- **Truvada**
Conclusion

• Preventing HIV in young women key to breaking chains of transmission in ESA and further reducing MTCT and Maternal Mortality Rates
• UTT is important but not sufficient on its own to reduce HIV incidence rates/MTCT in SSA
• Opportunities for prevention guided by cycle of transmission
  – Targeted male testing and treatment reduces HIV infection in young women
  – Reaching young men <25 years – gender norms; VMMC; … - no quick returns!
  – Missed opportunities for primary prevention in PMTCT & Treatment Programmes
• PrEP for young women address an important social challenge: Feasible to integrate PrEP into FP services & Mobile services; School based CSE; SRH services; Peer-support; digital technologies enhance uptake
• Partnerships & Community Inclusion Critical
• Need to invest in manufacturing, regulatory and communication capacity now
Acknowledgements

• Key investigators involved in these studies:
  • Salim Abdool Karim, CAPRISA & Columbia University
  • Ayesha Kharsany, Leila Mansoor, Cheryl Baxter, Tanuja Gengiah, Natasha Samsunder, Sharana Mohammed, Nonhlanhla Yende & Nigel Garrett, CAPRISA
  • Jo-Ann Passmore, Lindi Masson & Carolyn Williamson, CAPRISA & UCT
  • Lynn Morris & Penny Moore, CAPRISA & NICD
  • Tulio D’Oliviera, KRISP & CAPRISA
  • Marc Baum & John Moss, Oak Crest Institute of Science
  • Dan Barouch & Doug Kwon, Ragon Institute of MGH, MIT & Harvard
  • Brent Williams, Center for Infection & Immunity, Columbia University
  • Adam Burgener, Public Health Agency of Canada
  • Nichole Klatt, University of Washington-Seattle
  • Lyle McKinnon, CAPRISA & University of Manitoba

• Research teams involving >200 scientists & students

RESEARCH SUPPORT WAS PROVIDED BY:
Reflections from the first global community advisory board focused on long-acting technologies

Mr. Yves Kugbe
The Long Acting Technologies Community Advisory Board
SOME ROLES OF COMMUNITY ADVISORY BOARDS

- Promote norms and standards that advance needs-driven research;
- Review and inform the design of clinical trial design to ensure good participatory practices with the affected communities;
- Influence research and implementation decisions of researchers and developers from community perspectives;
- Assist by providing country-specific data;
- Advocate strategically to accelerate affordable access to long-acting technologies and interventions and overcome barriers (e.g., normative guidance, regulatory, pricing, intellectual property, licensing, etc.);
- Engage with donors and policymakers to drive development and access to new LAT tools.

CAB may be informed by other fields and policies but DOES NOT:
- Focus on the health systems barriers and social determinants of health
THE LONG-ACTING TECHNOLOGIES COMMUNITY ADVISORY BOARD (LAT CAB)

❖ Treatment Action Group is part of the Unitaid-funded LONGEVITY Project aiming to develop novel, long-acting therapeutics for HCV cure; and prevention of malaria and latent TB infection (LTBI) from 2021-2024.

TAG is coordinating the community engagement aspects of the project & developing treatment literacy materials about long-acting technologies (LATs)

❖ To ensure broader community engagement & participation, TAG partnered with AfroCAB recruited members May-July 2021, with independent external reviewers.

❖ External Advisory Group provides additional guidance.

❖ LAT CAB was established in Sept 2021 to:
  - Review the state of treatment research, contribute to research protocols and engage in research & development (R&D) process, including advising on research questions & trial design for LATs specifically under LONGEVITY Project
  - Engage with research scientists, community survey partners, product developers, & other research partners involved in developing malaria, HCV, and latent TB infection (LTBI) LATs during key moments in the development process.

❖ The LAT CAB focuses on the 3 diseases areas of the LONGEVITY Project:
  - Latent TB infection and malaria prevention & HCV cure
  - Composed 12 members from 10 countries for 4-year tenure
  - We are accepting additional LAT CAB members from Asia, EECA, MENA, and Latin American countries

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Call for new Global Long-Acting Technologies CAB members from Asian, Eastern European, MENA, and Latin American countries

APPLY NOW!!

TAG
Treatment Action Group

AFROCAB

www.hepCoalition.org
PROS & CONS OF LATS FOR AFFECTED COMMUNITIES

- Provides more freedom about the daily pills taken matter
- Addresses the main barriers to treatment adherence—namely, pill fatigue and stigma associated with taking medications
- Addresses some systematic barriers that cisgender women face with PrEP
  - Example: long-acting injectable antiretroviral regimen Cabenuva has dramatically reduced the dosing days from 365 days/year to 12 days/year
  - other benefits such as the removal of PrEP behavioural barriers among cisgender women
- The management of side effects may be more challenging with LA formulations due to the discontinuous release of active ingredients in the bloodstream
  - However, only drugs with existing oral formulations with known and tolerable side effects are being developed as LAT reduces the risk for adverse side effects
  - Accessibility related to costs and proximity to a health facilities for periodic injections (especially for populations in rural areas)
  - Injection may be a trigger for a return to drug use for people with a history of injection drug use
Access Needs & Community Recommendations

- Negotiate inclusion of high burden, upper- and middle-income countries in voluntary licenses

- Ensure multiple generic suppliers in-country under voluntary licenses to spur competitive pricing

- Involve affected communities and the consideration of their needs in all stages of product development
ACTIVIST TOOLS TO LEARN MORE ABOUT LATS
Activist Tools to Learn More About LATs

Hepatitis C and Tuberculosis Long-Acting Medicines: Analysis of Patenting Trends and Implications for Access

Gabriela Costa Chaves and Maria Lorena Di Giano
Activist Reference Tool 2021

Same Meds, New Patents: What Do Activists Need to Know About the Patent Landscape on Long-Acting Technologies?

SPEAKER
Gabriela Chaves
Independent Researcher

PANELISTS
Pedro Villardi
ABIA
Mykyta Trofymenko
100% Life
Chalermsak Kittitrakul
AIDS Access Foundation

MODERATORS
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ITPC
Bryn Gay
TAG
Joelle Dountio
TAG

Nov 4, 2021
9 AM EST

What’s on the Horizon for Long-Acting Pre-Exposure Prophylaxis (PrEP)?

Long-Acting Technologies Resource Compendium

Our resource compendium is a non-exhaustive list of materials covering long-acting technologies to inform the hepatitis C, latent tuberculosis infection, and malaria scope of work under the LONGLIVITY Project.
Considerations for inclusion of all populations throughout the product lifecycle, including pregnant individuals and children

Dr. N. Kumarasamy

Director at the Infectious Diseases Medical Center and the Chennai Antiviral Research and Treatment Clinical Research Site
Determinants for successful roll-out and uptake

Dr. Siobhan Crowley
Head of HIV at The Global Fund to Fight AIDS, Tuberculosis & Malaria
Links to announcements

MPP-UW licence about the pre-clinical all-in one TLD injectable candidate for HIV treatment

To know more about the LA injectable drug combination technology from UW, please visit its profile on the brand-new database of long-acting technologies patents and licences: LAPaL

Technology landscape of multi-purpose prevention technologies and their potential for LMICs

You may also be interested in browsing the online MPT product development database

Questions?

• About MPP-UW licence agreement, LAPaL, or MPP work, please send them to Lobna Gaayeb, MPP’s long-acting therapeutics manager  
  → lgaayeb@medicinespatentpool.org

• About UW long-acting technology, please send them to Prof. Rodney J. Ho from University of Washington  
  → rodneyho@uw.edu

• About MPT landscape, please send them to Dr. Bethany Young Holt from CAMI Health  
  → byh@cami-health.org
Thank you for your attention, stay safe!