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Paediatric virologic failure in Malawi: Epidemiology, risk factors, and programmatic implications

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Science, policy and
community: the next
priorities for a sustainable
HIV response in Malawi

19-20 October 2026

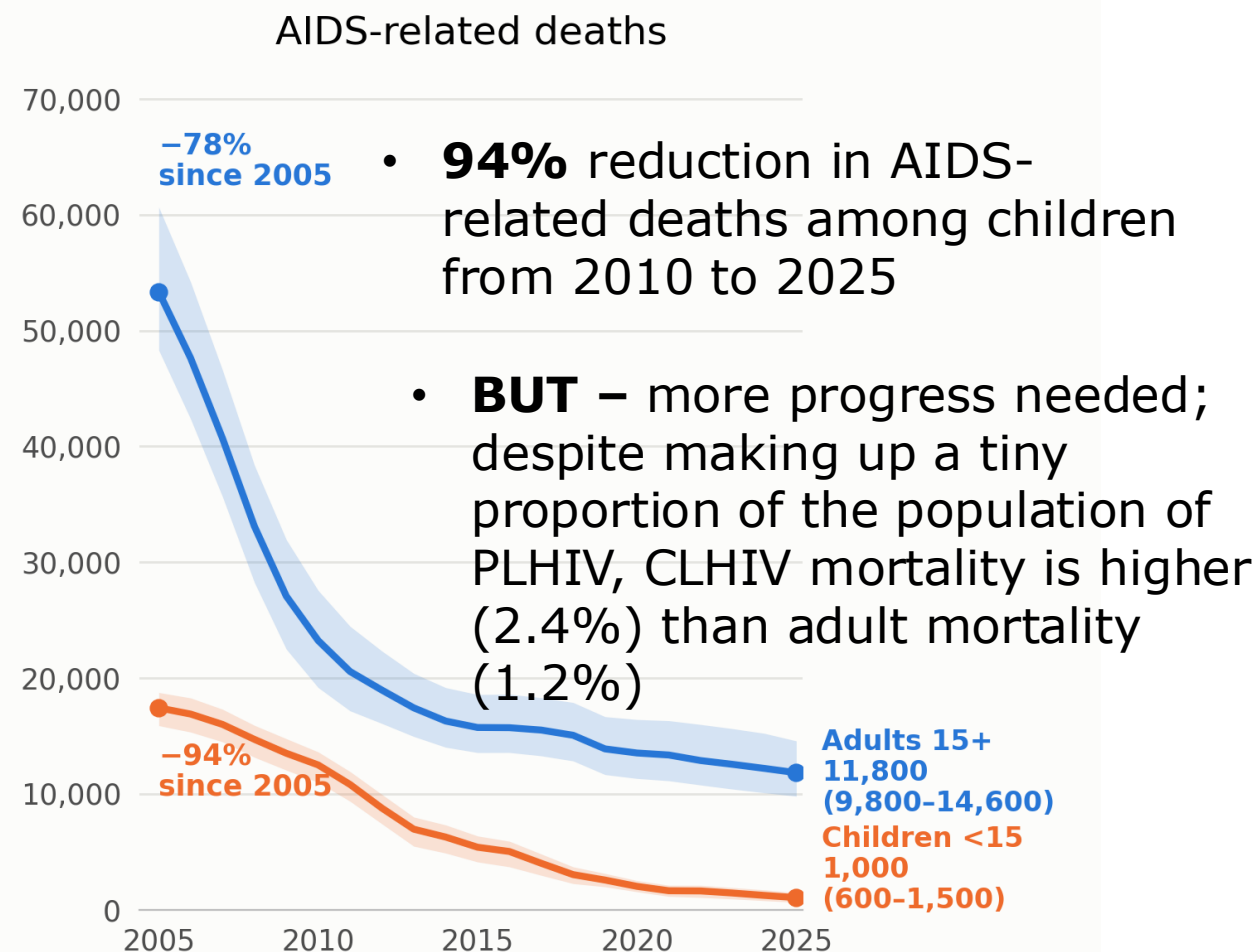
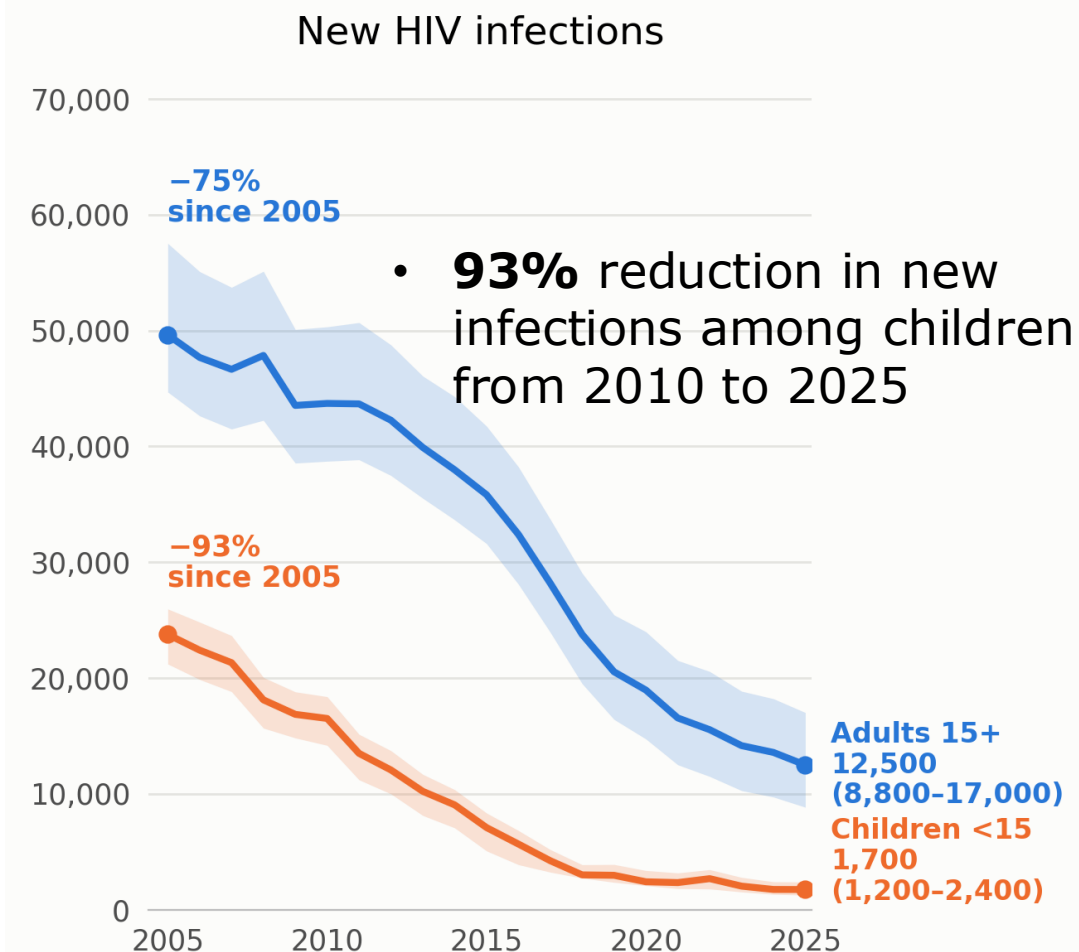
Lilongwe, Malawi

The pediatric HIV landscape in Malawi





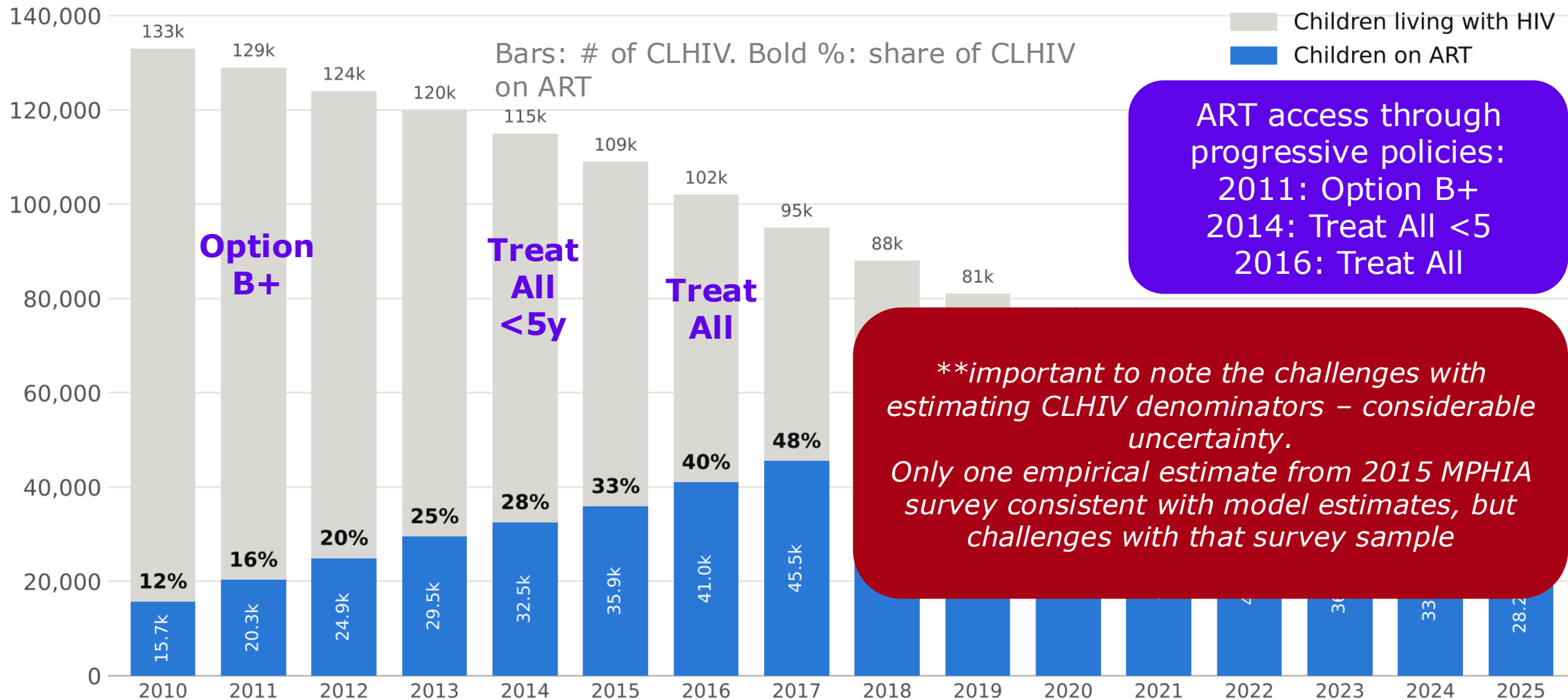
Progressive Policies have led to declining new infections and reductions in mortality



Source: UNAIDS 2026 estimates (Malawi_2026_v12). Lines show estimates; shaded bands and bracketed ranges show lower-upper bounds. Values rounded to the nearest 100; % change calculated from unrounded values.



Malawi: *Estimated* children 0-14y on ART and treatment coverage, 2010-2025



Malawi estimates for children (0-14 years) | 2025

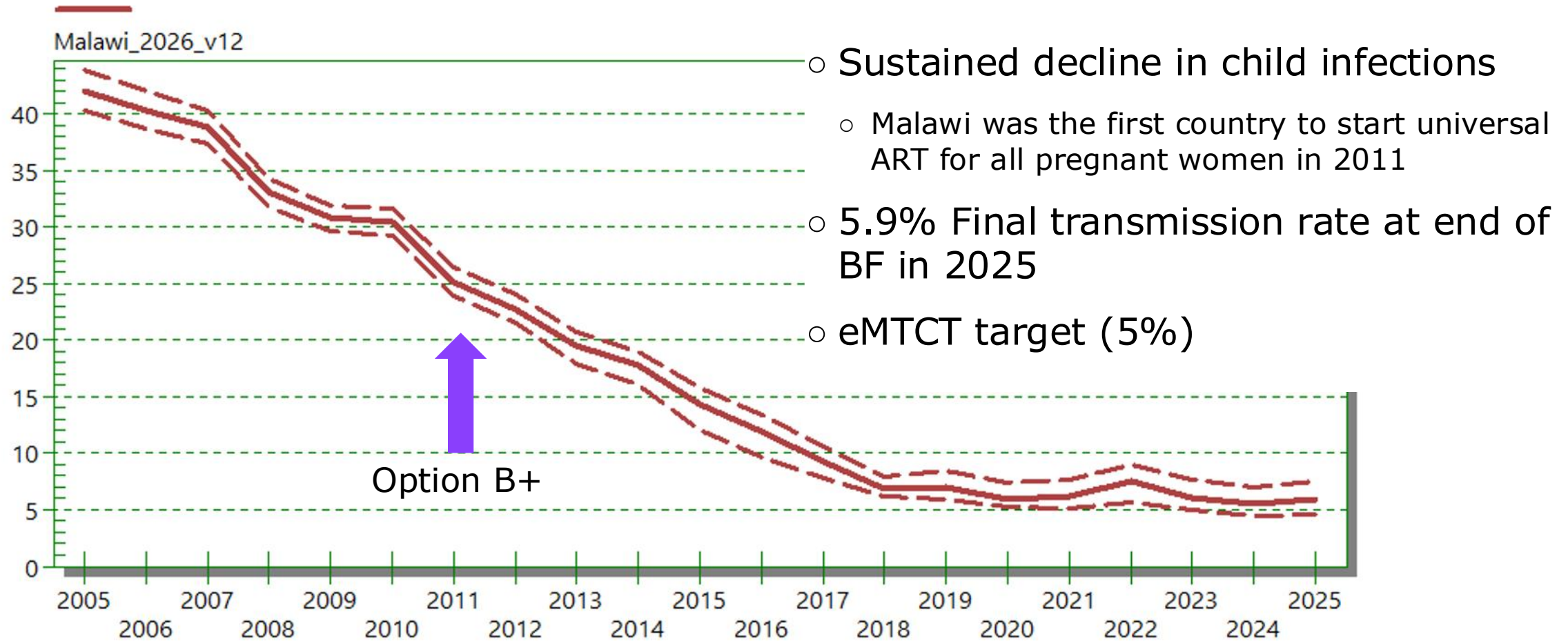
Children living with HIV	42,100
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New HIV infections	1,700
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Deaths due to AIDS	1,000
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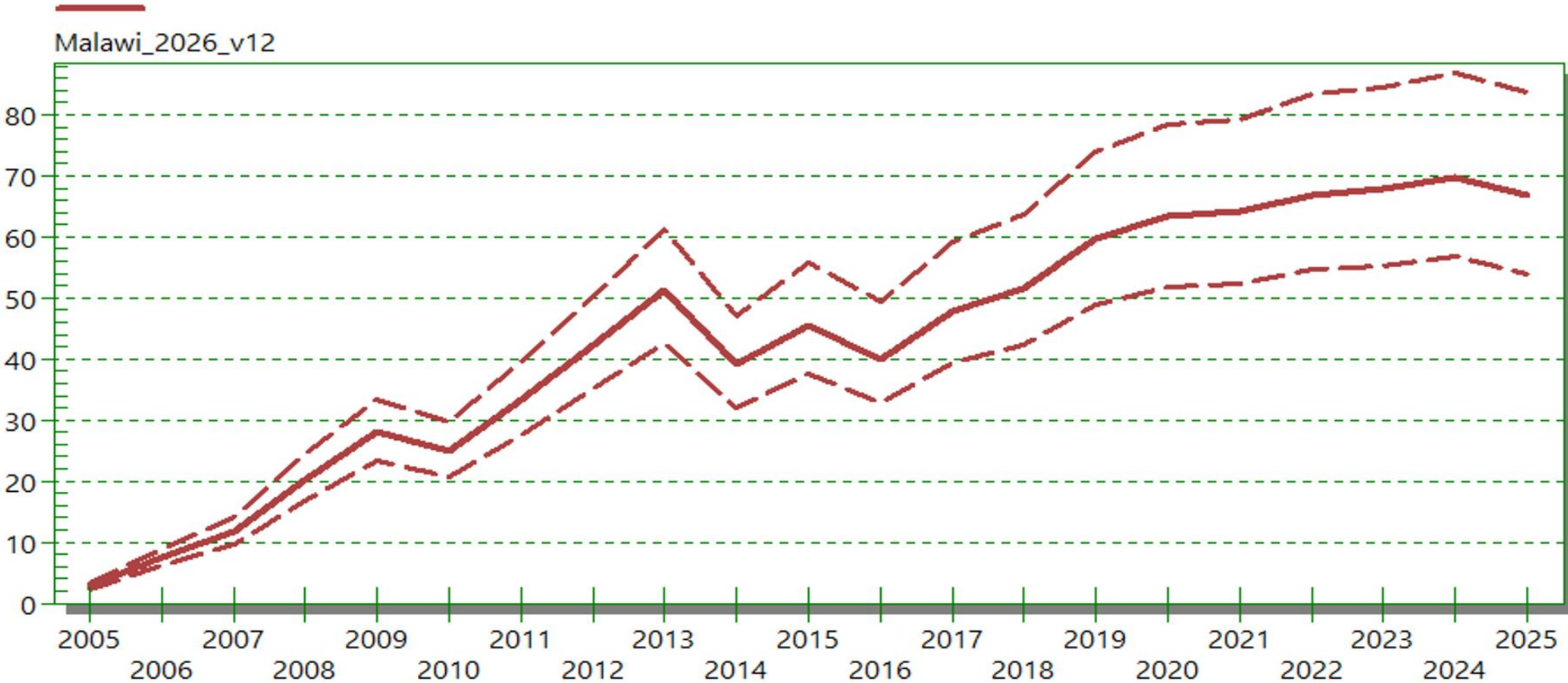


IAS Final transmission rate through end BF in 2025 at 5.9%, approaching 5% eMTCT target



Malawi_2026_v12	42.07	40.34	38.85	33.12	30.84	30.51	25.16	22.79	19.49	17.74	14.39	11.96	9.21	6.80	7.02	5.98	6.16	7.49	6.05	5.53	5.89
Lower bound	40.31	38.78	37.34	31.81	29.73	29.29	23.91	21.55	17.95	16.12	12.05	9.70	7.82	6.17	5.99	5.20	5.07	5.72	4.98	4.45	4.59
Upper bound	43.92	42.03	40.38	34.40	31.97	31.72	26.43	24.10	20.80	19.05	15.83	13.45	10.60	7.96	8.49	7.44	7.68	9.01	7.61	6.96	7.52

 IAS Sustained ART coverage increase, with estimated 2025 child coverage leveling off between 55-85%



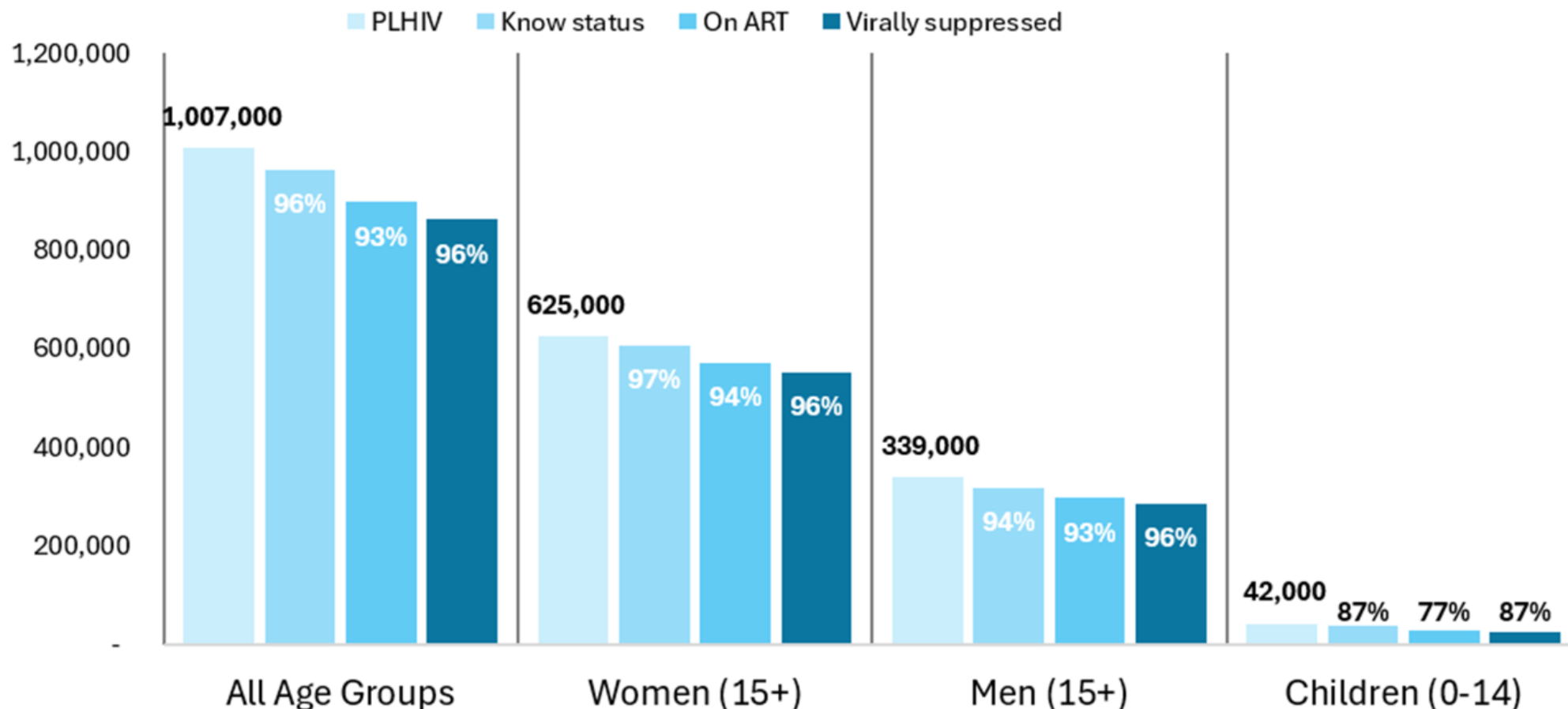
Malawi_2026_v12	2.68	7.39	11.67	20.17	28.17	24.90	33.32	42.19	51.30	39.06	45.55	40.03	47.83	51.58	59.78	63.35	64.10	66.86	67.77	69.63	66.95
Lower bound	2.25	6.20	9.66	16.68	23.38	20.69	27.62	35.10	42.62	32.11	37.58	32.84	39.27	42.23	48.79	51.68	52.39	54.63	55.27	56.92	53.79
Upper bound	3.19	8.86	14.06	24.44	33.42	29.72	39.77	50.15	61.35	47.07	55.65	49.34	59.27	63.64	73.95	78.34	79.15	83.38	84.37	86.82	83.76



Despite progress, children lag behind adults

The small denominator for children amplifies the uncertainty of these coverage estimates

Spectrum Treatment Cascade (Dec.2025)



Overall:
96-**93**-96

Women:
97-**94**-96

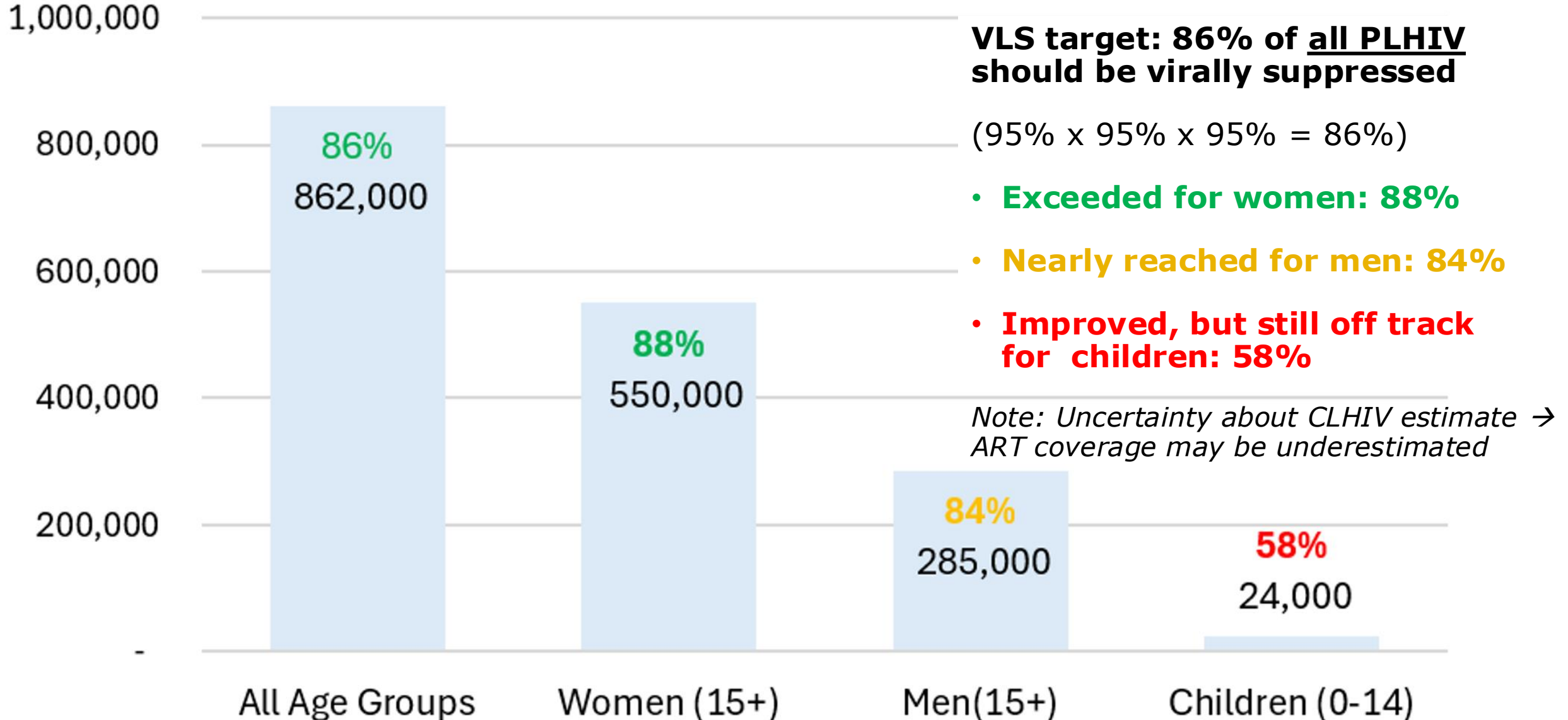
Men:
94-**93**-96

Children:
87-**77**-**87**



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Zooming in on the cascade: 58% of estimated CLHIV virally suppressed



IAS 2026:

Changes bring threats and opportunity

- Significant changes in funding and IP support at all levels of health system, including many high- and low-volume facilities with changes in staffing
 - Impact on clinical and lay health worker staffing, supply chain, laboratory, community support, data systems
 - Implications on systems for HIV testing including EID, VL collection, adherence support, retention, ancillary services
- Manageable, but requires creativity, innovation and flexibility
 - Leverage best practices from prior programming to maintain progress

The first step in achieving VLS is to take ART... so who is not on ART and why?

Children 0-9 years:



- Diagnosis gap likely <10%, only ~500 children <10 years in all of Malawi remain undiagnosed, BUT some do!
- **ART linkage and retention** in this group is a much larger gap than diagnosis

Older children (especially 15 years+):



- **Diagnosis** is the biggest gap
- ART linkage and retention remain a challenge



MTCT– where are new child infections?

- 40% infected during pregnancy

41% from mom **IIT**

20% **new ifx** during pregnancy

16% **no ART** during pregnancy

- 60% infected during breastfeeding

43% **new** ifx during BF

32% from **mom IIT**

Total Child infections	1,735	100%
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Tot. Children Infected during Pregnancy	692	40%
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Mother started ART before the pregnancy	71	10%
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Mother started ART during the pregnancy	55	8%
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Mother dropped off ART during pregnancy	287	41%
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Mother started ART late in the pregnancy	31	4%
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Mother did not receive ART during pregnancy	110	16%
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Mother infected during pregnancy	138	20%
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Tot. Children Infected during Breast feeding	1,043	60%
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Mother started ART before pregnancy	71	7%
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Mother started ART during pregnancy	117	11%
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Mother dropped off ART	331	32%
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Mother started ART late in pregnancy	12	1%
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Mother did not receive ART during breastfeeding	61	6%
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Mother infected during breastfeeding	451	43%
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Overall:

- ~ 36% of new child infections are from mothers who interrupted ART
- 34% new maternal infection
- Only ~10% No ART at all



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Programmatic Implications: CLOSE eMTCT program gaps

FIND women with incident infections and KEEP them in care

- **FIND women and get their VL down fast** - test pregnant ,BF women
 - **1st and 3rd ANC visit, maternity**
 - **EPI* – ASK MOMS their status** (*anyone can ask!!*) – opportunity not only to find moms but also to re-engage exposed and infected infants!

*identify home deliveries, missed EID milestones, untested siblings

*good opportunity for PrEP linkages (especially AGYW!), HIVST for

- Rapid linkage to **maternal ART** to decrease maternal VL
- Infant prophylaxis

- PRIMARY PREVENTION- **planned pregnancies** while LDL

- MAINTAIN LDL VL - Focus on **early retention and main**

- Guided discussions with women returning to care, anti-disruptions with moves at delivery, possible GBV, disclosure

- Innovative use of technology can streamline this -- use of audio in particular

Sustainability risks and opportunities:

- HSAs: HIV screening
- Expanded access to ART initiation and VL testing
- integrated FP
- *Who and how to better promote retention?*



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Where are we missing opportunities to link (diagnose or re-engage) young children?

- **Test and RETest Pregnant and BF women** to find women with new diagnosis
 - 1st and 3rd trimester, maternity
 - Use EPI opportunity for missed deliveries, PrEP linkages
- **Family mapping - ICT of children of all people on ART – part of ART record!**
- PITC: screen mothers to know which children to test at OPD, test all children with TB, undernutrition
- ASK mom's status to determine child's need for testing

Changes for sustainability

- Integrate questions about mom's HIV status into OPD, EPI, etc – by clinicians, HSAs, whoever is available.
- Add child HIV status to parent mastercard for clinician to ask
 - Continued commitment to 100% testing coverage at ANC, maternity and children with tb, sick, undernourished/FTT



ICT Family Mapping: find CALHIV missed by EMTCT and re-engage those out of care

Ask everyone on ART "where are your children?"

- **EMBED IN ART RECORD** as a constant reminder to assess status
- Example: CHILD ICT CARD - a **brief community health worker-administered screening tool to systematically document HIV status of CLHIV and link them to their mothers**
- screen clients in ART clinic, list children

* Add family map to mastercard or just write in comments - <5 min for provider to complete

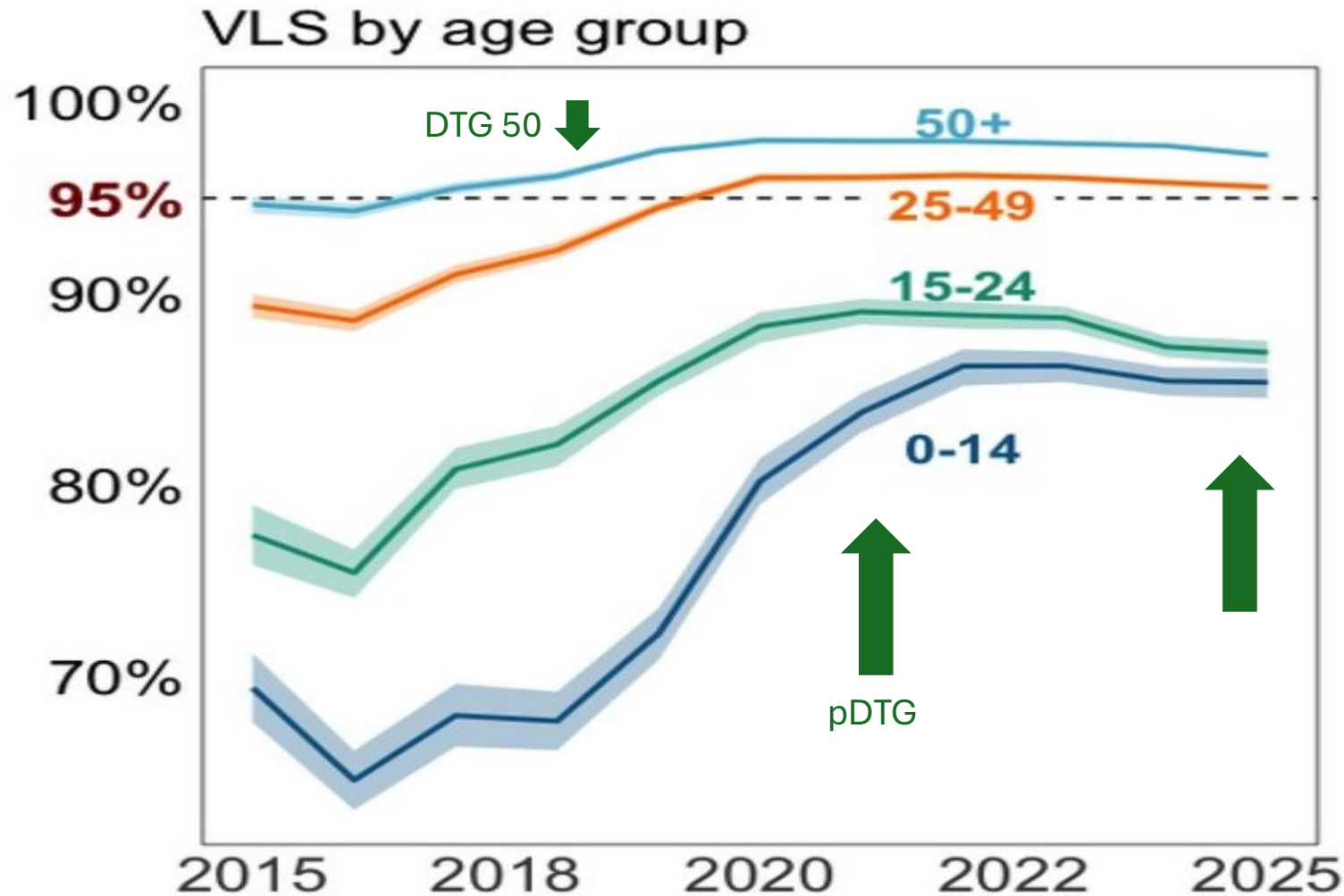
- ~100,000 women screened through ART
- At baseline, 24% of women had at least 1 untested child
- Through use of the card, >90% of these women had all children with status confirmed, 442 new CLHIV identified, 1.7% yield

What about the
children who are on
ART, but not
suppressed?

Implications for our
program



Care and treatment: viral suppression by age group



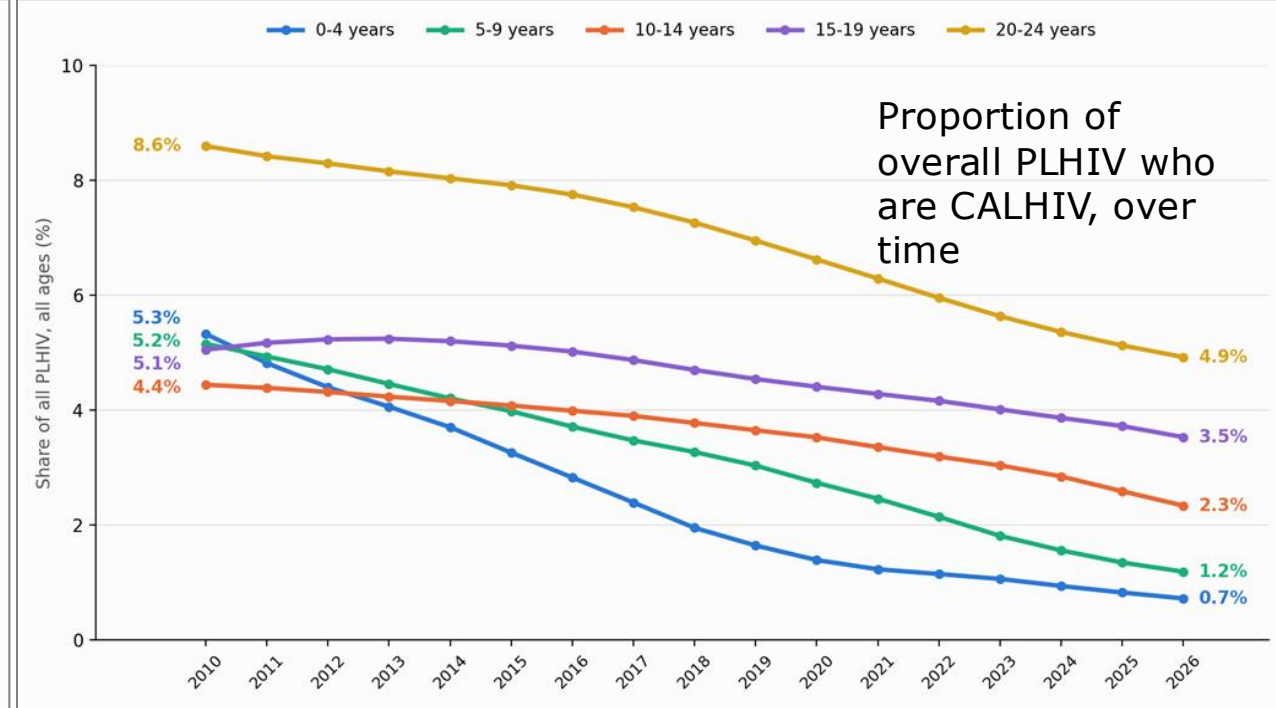
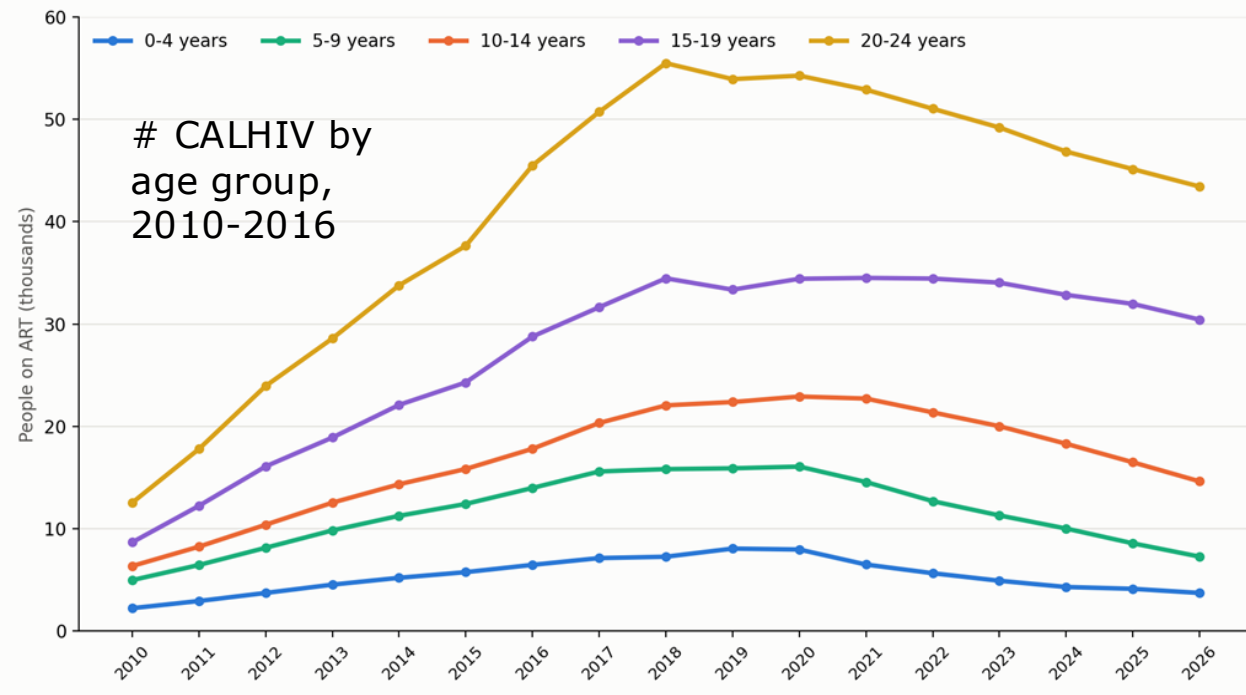
- Above 95% among ages 25 and older
- Gaps among children (0 to 14) and ages 15 to 24
- Treatment options for youngest children remain limited
 - High pill burden for youngest children even with pALD
 - No subsequent-line option for <3 years or < 10 kgs
 - Formulation challenges (lack of FDC, etc)



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With successful PMTCT, we have increasing numbers of older children/ adolescents with long-standing perinatally acquired HIV + adolescents with newly acquired HIV: age-appropriate support is critical

Leverage best practices to deliver ministry-led, age-appropriate support



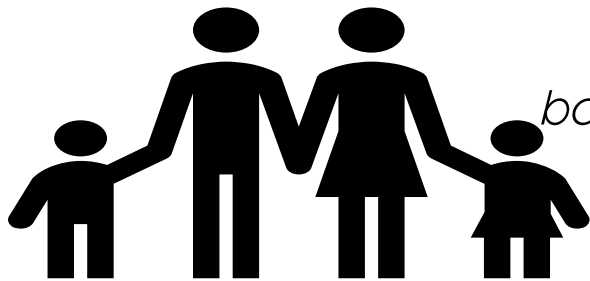


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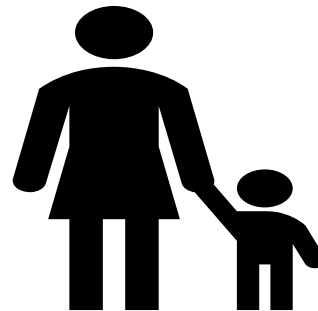
Programmatic Implications: Retention for CALHIV depends on engaged caregivers

Approach # 1:

Offer same day booking for
family members and provide
MMD to children and youth



*Family
bookings with
MMD*



MIP



Approach # 2:

Adolescent Care should be intentional

Threats:

- 1) Accidental disclosure → stigma
- 2) Teens are lost to follow up when booked in weekly routine clinics.

Solutions:

- 1) Use a team approach to support disclosure. Identify a focal person for disclosure at all facilities; everyone should understand how to avoid accidental disclosure and when to address it, not everyone need be an expert
 - 2) Maintain the teen club model
- 1) Confidential disclosure
 - 2) Teen Clubs -Adolescent-FOCUSED, Adolescent-ONLY, Adolescent-FRIENDLY ART Services with peer support in a private, safe space and engage guardians

Approach # 3:

Promote retention:
Anticipate and
address CALHIV
adherence barriers

- Take ARV
- Name a
- Follow s
- after fu
- Lack of
- within t
- What to
- People
- they fee

Threats:

- Much of the counseling was provided by treatment supporters; HR gaps → gaps in counseling
- Need better formulations

Solutions:

- Be welcoming!
- Leverage tech – audio/video
- Advocacy for LARC

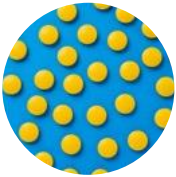
Common adherence barriers
have straightforward solutions:
most are simple



Critical: Understand why the VL is high



Suboptimal adherence –
Gaps in adherence support from adults to CALHIV



Inadequate regimens
(Mono/dual therapy, failure to weight-adjust dose,
administration error)



Drug-drug interactions, malabsorption leading to sub-optimal drug levels.



Opportunistic infections or intercurrent illnesses



Resistance to one or more ARVs

Not enough
medication going
into the body

Medication is
going in, but drug
levels aren't high
enough

Drugs do not
work -
RESISTANCE



Most children with detectable VL on DTG-based ART **will resuppress with enhanced adherence support, but those who do not, need genotyping**

- Baylor Malawi Tingathe program: 75% (1930/2582) CALHIV with HVL on DTG suppressed after individualized enhanced adherence support¹
- **HIVDR Surveillance: ~67% of CALHIV with HVL on DTG with a follow up VL resuppressed after 1st EAC**
- Bello et. Al: 56% resuppressed after EAC; weighted prevalence of DTG resistance among those with confirmed VL = 15.6% with **major DTG DRMs in 14.2%** (8.5% with major DTG DRMs)

– July 2022 – Feb 2023

– Lower rates of resuppression in the

– 3 children had HIVDR to all four c

EAC is a strong tool to achieve vi but genotype those who don't re

Threats:

Bottlenecks to genotyping already exist, so advocacy to maintain programming is critical;

- Maintain expert pool and genotyping access with prioritization by risk
- leverage consultation hotlines
- Improve access to subsequent-line therapy that is palatable, age-appropriate, and easy to take



IAS Achieving VLS: Act early to support adherence and prevent resistance!

- Protect systems for **VL monitoring** to facilitate earlier adherence interventions (POC where possible)
- Active **engagement of guardians** in ROUTINE ONGOING **adherence support** through childhood and adolescence normalizing and anticipating adherence challenges
- Continued innovation around effective, evidence-based models of **adherence support** to maintain VLS and prevent development of DR
- genotyping access and surveillance to track trends and identify ART needs
- **New formulations** to improve adherence and suppression
 - TAF in pipeline – anticipate improved VLS for children on TAF/XTC/DTG-based regimens
 - Need for alternative options for the smallest children with resistance
 - Long-term orals , injectables, other innovative formulations

IAS Recommendations: Leverage and Adapt Best Practices: *adapt and iterate - continue critical aspects*

- We have many opportunities to identify CLHIV, link or re-engage them in care, and support suppression - leverage best practices of prior IP programming to maintain prioritization!
- Prioritize continued VL monitoring with timely adherence support to prevent resistance development
 - Explore innovative approaches to adherence support
 - Advocacy for improved access to VL testing and nearer-to-client VL /genotyping
- Continued advocacy for improved formulations for children, including long-acting oral, injectable, and other innovative delivery approaches for ART remains critical
- Leverage technology to simplify and task-share
 - Streamline straightforward messaging through audio/video counselling prior to individual
 - Technology for learning / capacity building – trainings and hotline support



Acknowledgements

- Dr. Carrie Cox, Dr. Stephen Chu, Dr. Elizabeth Musyani, Martin Maulidi, Fatima Ndege, Thom Chirwa, John Phiri, Tiwonge Chimphandule, Dr. Saeed Ahmed, Prof. Andreas Jahn
- The Department of HIV, AIDS and Viral hepatitis, Malawi Ministry of Health; NAC
- Tingathe Program team, Baylor College of Medicine, and BFM
- US Department of State
- The patients, families, and communities who entrust their care to us



Zikomo!