

AHD/AIDS in the time of COVID-19

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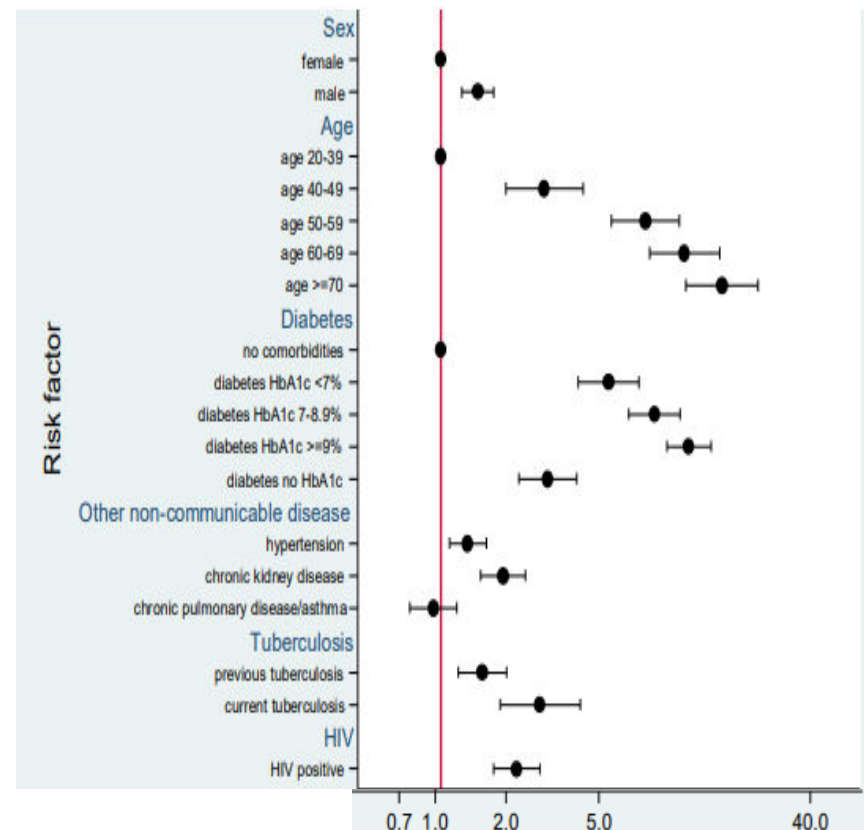


Southern Africa Medical Unit (SAMU)

Impact of HIV and TB on COVID-19

- HIV & TB doubled the risk of COVID death in SA (Davies, medRxiv; 22,308 COVID, 3978 PLHIV)
 - No impact of viral suppression
 - 12% and 2% of COVID deaths attributed to HIV and TB
- Controlled HIV didn't result in poorer COVID outcomes in other studies (Cooper, HIV Medicine; Syst. Rev. 8 studies; 70 PLHIV)
- Impact of CD4 remains unclear

Risk factors of COVID death among 3.5 million patients > 20 years in the public sector in the Western Cape (SA)



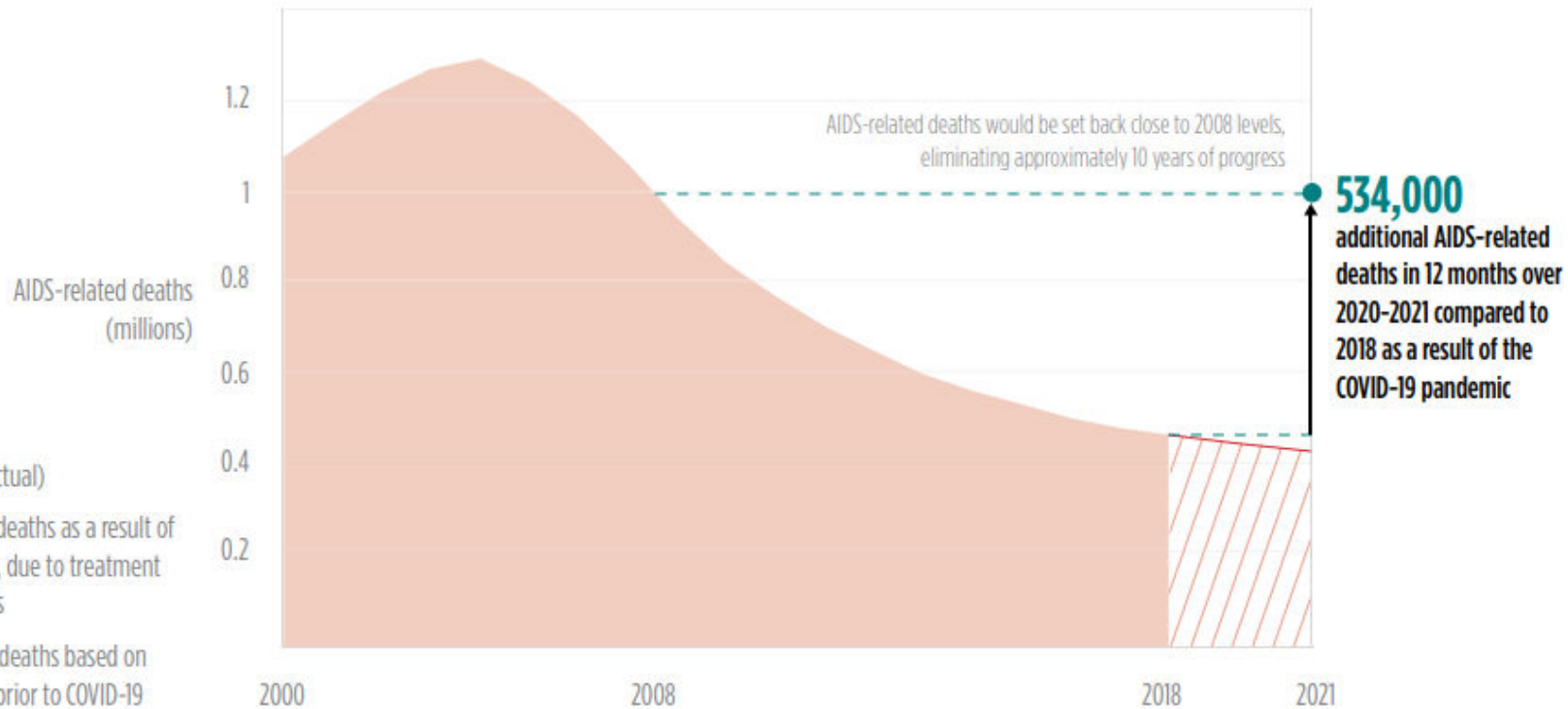
Adjusted Hazard Ratio for COVID-19 death

Potential Impact of COVID-19 on HIV/TB: estimates from models

- Deaths due to HIV, TB, and malaria over 5 years could increase by up to 10%, 20%, and 36% (Hogan, Lancet Glob Health)
 - ART interruptions
 - Drop in HIV prevention activities (condoms, VMMC, PreP...)
 - Drop in TB diagnoses and treatment
 - Drop in bed net campaigns
- Malaria and HIV additional disease burdens outweighing that from SARS-CoV-2 in Uganda (Bell, Am J Trop Med Health)
- Potential 1,788,100 excess TB cases and 511,930 deaths by 2025 (Stop TB Partnership, 2020)

Potential Impact of COVID-19 on HIV deaths: model estimates

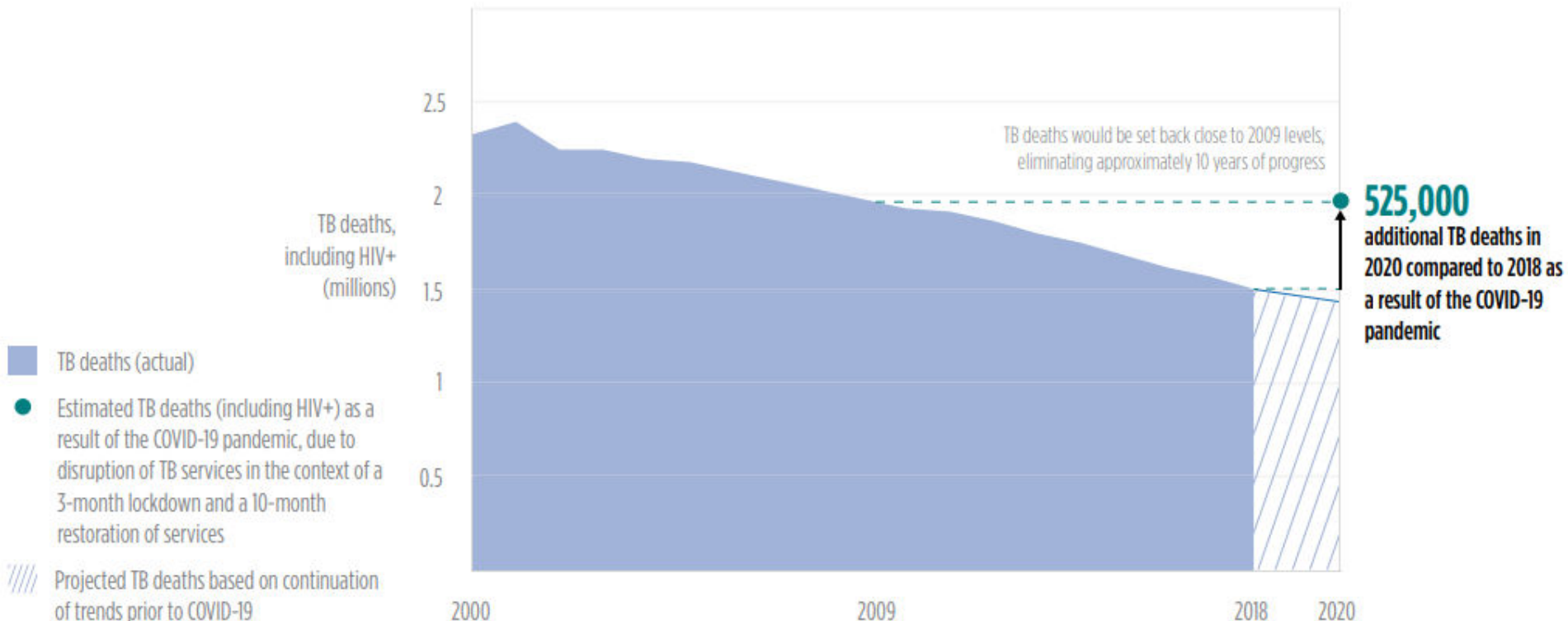
Potential increase in AIDS-related deaths due to HIV treatment disruption in the context of the COVID-19 pandemic in sub-Saharan Africa



Estimates of AIDS-related deaths over 2000-2018 from UNAIDS, 2019 release. Estimation of projected AIDS-related deaths over 2018-2021, based on continuation of trends prior to COVID-19. Estimation of potential AIDS-related deaths as a result of the COVID-19 pandemic from modelling work convened by WHO and UNAIDS, 2020.

Potential Impact of COVID-19 on TB deaths: model estimates

Potential increase in TB deaths due to TB service disruption in the context of the COVID-19 pandemic globally⁴



Estimates of TB deaths (including HIV+) over 2000-2018 from WHO Global TB Report 2019. Estimation of projected TB deaths over 2018-2020 based on continuation of trends prior to COVID-19. Potential TB deaths (including HIV+) globally as a result of the COVID-19 pandemic estimated for the year 2020 from Stop TB Partnership (and partners) modeling study, 2020 which assumed a conservative lockdown period of 3 months and recovery period of 10 months. These additional estimated TB deaths are due to TB service disruptions and exclude TB deaths that may happen in people living with HIV because of disruptions of ARV and other HIV-related services.

Impact of COVID-19 on HIV/TB services

Reduced resources for HIV/TB

- **Repurposing** of HIV/TB staff, facilities and laboratory to COVID
- **Decreased staff** due to COVID infection and prevention
- **Refusal of care** due to lack of PPE, fear of infection, and strikes
- **Stockouts** of ART and OI treatment
- **Food insecurity**

Reduced Access to Care

- **Decreased service utilisation**
- **Stigma and fear** of HCW and community
- Increase in **late presentation with AHD and AIDS**
- Increase of **treatment interruptions**
- **Difficult differential diagnosis** with PCP, CAP, and TB
- **Social isolation**

Emerging data on impact of COVID

WHO Survey of 119 countries

- Widespread **ARV disruptions** across all regions
 - 73 countries (70% of all on ART) risk ARV disruption
 - 36 countries (45% of all on ART) disruption in provision of ARV services.
 - 24 countries (33% of all on ART) critically low stock of ARVs
- **Disrupted HIV testing, prevention, Hepatitis and STI services**
 - 61 countries disruption other prevention, testing and treatment services
 - 38 countries disruption in HIV testing
 - 17 in KP services, 12 condom provision, 7 PrEP

Emerging data on impact of COVID

In South Africa:

- 59% and 33% drop in **TB daily GeneXpert and diagnoses**
- **Hospital admissions** for HIV and TB declined (Karim, Science)
- 50% decline in **CrAg tests done during lockdown**
- Decline in **diagnoses of AHD** (NICD)
- 1090 TB and 10,950 HIV patients in one province didn't collect their medications during lockdown
- 13.2% indicated inaccessible chronic medication (national survey)
- Resilient PHC in KZN during 1st month of lockdown (Siegler, medRxiv)

Where ? AHD in MSF pilot projects



Advanced HIV Disease screening package

We need a mix of CD4 testing tools to keep favorable costs

Storage requirements, training requirements & ease of use, time to results, additional materials, cost etc...

PIMA
25mins to result
2-3 samples per hour
\$6-10 per test (excl device)



BD FACSpresto
25mins to result
8-10 samples per hour
\$7.50 per test (excl device)



Omega Visitect CD4 LFA
40mins to result
\$3.90 per test



Alere Urine TB Lam (25mins to results; \$3.5 per test)



IMMY CrAg LFA (10mins to result; \$2 per test)



GeneXpert:
HIV VL, MTB/Rif.
(for bigger Health Centers)

Where to test?

Tertiary Level Hospital
(Specialists/senior lab techs)

Secondary Level Hospital
(Lab technicians and assistants)

Primary Health Care
(including peripheral clinics, health posts, mobile outreach)
(Health care professionals, trained lay cadres but no trained lab personnel)

PLOS ONE

RESEARCH ARTICLE
Diagnostic performance and usability of the VISITECT CD4 semi-quantitative test for advanced HIV disease screening

Zibusiso Ndlovu^{1*}, Lamin Massaquoi², Ndim Eugene Bangwen², John N. Batumba².

COVID HIV/TB Mitigation Strategies in MSF:

1. Community Treatment in Eshowe, South Africa

- Stable patients: HIV, TB, diabetes, HT, FP, IPT, EPI
- Pre-packed medication
- 47 Community Pick-up Points for 15,000 patients in 9 clinics
- Call centre matching patients
- TB & COVID screening by CHW
- M&E synchronized with clinic



COVID HIV/TB Mitigation Strategies in MSF:

2. Adapting TB services in Mumbai (Meneguim, IJTLD)

- TB clinic **patient flow & IPC**: separate queues for report, sputum & consultation
- **Oral treatment** and spaced appointments for DR & DS TB
- **Decentralized drug delivery** and home-based port-a-cath
- **Video & telephonic** patient support
- **Telemedicine** doctor consults



COVID HIV/TB Mitigation Strategies in MSF:

3. COVID & AHD in Kinshasa, DRC (Mucinya, AIDS2020)

- **Integrated screening**
COVID/TB/HIV & Triage
- **IPD: Respiratory Tent** with separate staff; **empiric treatment** for CAP/PCP; **Xpert TB/COVID**
- **Enhanced DSD** for TB/HIV: fast-track, MMD, community refill
- **Crag/TB LAM** if CD4<200
- **HP** for danger signs/AHD



COVID HIV/TB Mitigation Strategies in MSF:

4. Continuity of TB services in Zhytomyr, Ukraine

- Reduction of “non-essential” services and transport led to reduced access to TB services
- Tele- medical and patient support consultations
- Health promotion via **social media**
- **Advocacy** with health authorities
- **Transport** of medicines and staff
- Switch from DOT to **VOT or SAT**
- Reimbursement of patients for cost of drugs for side effects
- Delivery of ARVs by post



COVID HIV/TB Mitigation Strategies in MSF:

5. Adaptation of DSD for HIV in Khayelitsha, South Africa

Stable Patients (2): Expansion of Home Delivery + Longer Refills

	Home Delivery	Longer ART Refills
Key Changes	<ul style="list-style-type: none"> Patients who are already receiving centrally-packed chronic meds and are contactable Not-for-profit (NPO) community care workers deliver to patient homes 	<ul style="list-style-type: none"> Expedite switch to TLD 4 month refills – TLD only (shortage of TEE - requires switch + clinical review)
Successes	<ul style="list-style-type: none"> Expanded to include ART 	<ul style="list-style-type: none"> Scripts valid 1 year (vs 6 months) Group information sessions + consent to switch
Challenges	<ul style="list-style-type: none"> Updated contacts and addresses Drivers (Uber/NPO) 	<ul style="list-style-type: none"> Staff need convincing and support Pharmacy monitoring



Conclusions

- Modest increase of risk of COVID death with HIV/TB
- Models predict reversal of gains against HIV/TB
- Increasing evidence of HIV/TB service disruptions in every continent:
 - Reduced access to HIV and TB prevention & services
 - Reduced HIV/TB diagnoses and treatment initiations
 - Increase in stockouts & treatment interruptions
 - Increase in late presentations and AHD
- Multiple interventions piloted to mitigate impact:
 - COVID/HIV/TB integration
 - Enhancements of DSD: MMD, community/home refills...
 - Increased use of telemedicine and phone
 - Acceleration of shift towards all oral DR TB treatment, VOT and SAT, and TLD
 - Opportunity to scale up AHD package of care at hospital and primary care (CD4, CrAg, LAM)