EPHI, National Data Management Center for health (NDMC)
Quick update on COVID 19, 010

This update summarizes	
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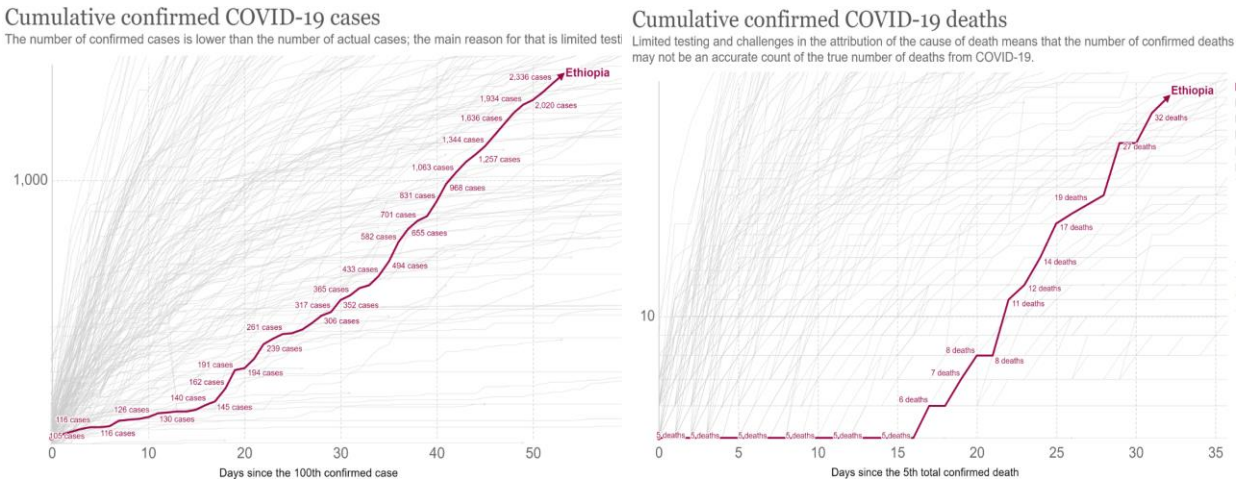
The week's issue of high concern; ***the increasing postmortem COVID 19 positives reports and its implications***

Ethiopia's COVID 19 situation update

Fast growth in the numbers of new cases and deaths has been reported across the country. In a week time, the cumulative cases have increased by 38% jumping from 1,636 on June 04 to 2,670 on June11, 2020. The deaths have increased by 30% from 28 on June 04 to 40 deaths on June 11, 2020. The number of recoveries has shown a 42% increase. The total number of tests stands at 165,151. Active cases represent about 82% of the total cases.



Source : Our world in data

Addis Ababa has carried the highest number of cases compared to other regions and has reported a surge of community and cluster transmissions. Addis Ketema Sub city followed by Lideta has carried the highest burden of cases and the highest community transmitted cases

EPHI and FMOH COVID 19 response highlights of the week

- EPHI in collaboration with UNICEF, shared an Amharic version of a quarantine facility messages to Ethiopian communities staying in Beirut Refugee Camp on June 9/2020
- Starting June 9/2020 two mobile vans have been deployed for mass education in Addis Ketema and Lideta sub-cities.
- On June 9/2020, EPHI produced News regarding COVID-19 asymptomatic cases shared on social media.
- Second round WASH and IPC training of trainers training for 22 and 20 WaSH and IPC experts were provided by EPHI from June 4-6 in Amhara and Somali regions respectively.
- Three days comprehensive Training on COVID-19 conducted from June 4-6

  - For 25 Health professionals from National Defense force from West Command in Jimma Town
  - For 20 health professionals from federal police training Camps and Crime prevention Division of south west part of Ethiopia in Jimma Town
  - For 29 Health professionals from private Hospitals in Addis Ababa

- June 07/2020, Orientation on COVID-19 given for 70 Idir leaders.
- June 05/2020 EPHI has distributed PPEs, pharmaceuticals and other medical supplies to St. Paul's Hospital Millennium Medical College, Millennium Hall, Madawalabu University isolation center, and Shire Refugee and Returnees coordination office.

References

1. PUBLIC HEALTH EMERGENCY OPERATIONS CENTER (PHEOC), ETHIOPIA

Global and regional burden of COVID-19

- Between June 4 and June 11, 2020, globally the total number of cases increased by 13% (6.57 to 7.48 Million cases) and the number of deaths increased by 8% (from 388047 to 419469 deaths). More and more people are recovering each day, which gives a total of 3.79 million recoveries globally since the beginning of the outbreak.

- In the USA, the epidemic has continued to ravage the country. As of June 11, the country has recorded the highest number of cases (2.1 million cases) that accounts 28% of the total global

cases and carried 27% of global deaths. The continued widespread demonstration to protest the unjust killing of unarmed black man by the police across the country that would likely to push the disease trajectory further upward could be seen in the coming weeks.

- Brazil has remained the second COVID-19 case burden country in the world. The number of cases has increased by 33% in a week time reaching to 775,184 cases, and the deaths has increased by 22% reaching to 39,797 as of June 11, 2020. South America is the currently the epicenter of the pandemic. Peru reported 208,823 cases and 5,903 deaths followed by Chile reporting 148,496 cases and 2,475 deaths as of June 11,2020

- As of June 11, 2020 Russia has the highest number of cases in Europe, with 502,436 cases. The pandemic has been declining in most European countries. Spain (289,360 cases), UK (290,143 cases), Italy (235,763 cases), France (155,136 cases), Germany (186,510 cases). The share of European countries from global death toll has shown a gradual decrease. Russia continues to report less number of deaths (6,532) for its case only about 1%.

- Africa's contribution to the global COVID 19 pandemic has still been low (only 2.8% of the global cases and 1% of deaths as of June 11. However, the cases number has increased by 22% in a week time (from 164,983 to 212,351) within the continent. Similarly, the total number of deaths in Africa has increased from 4627 to 5718, showing a 24% increase in a week time. Total recoveries stand at 97,287. South Africa (55,421 cases, 1,210 deaths), Egypt (38,284 cases, 1,342 deaths), Algeria (10,484 cases, 732 deaths), Nigeria (13,873 cases, 382 deaths), Ghana (10,358 cases, 48 deaths), Cameroon (8,681 cases, 212 deaths), are still in the leading pack in reporting COVID 19 cases and deaths.

- COVID 19 cases and deaths have been showing fast progress in East Africa. The case number in Ethiopia has increased by 80% in a week time (from 1,486 to 2670 cases) and 40 deaths, neighboring Sudan reported 6,582 cases and 401 deaths, Djibouti 4,373 cases and 34 cases, Somalia reported 2,452 cases and 85 deaths and Kenya reported 3,094 cases and 89 deaths.

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Impact of COVID 19 on Tb Burden

- A study conducted in high TB burden countries, suggests that any potential 'benefit' of social distancing on TB burden is likely to be larger for TB disease incidence, but there will be a net increase in deaths with some level of health service disruption. If health services are

substantially disrupted, there will be an increase in both TB cases and deaths, regardless of the level of social distancing (1).

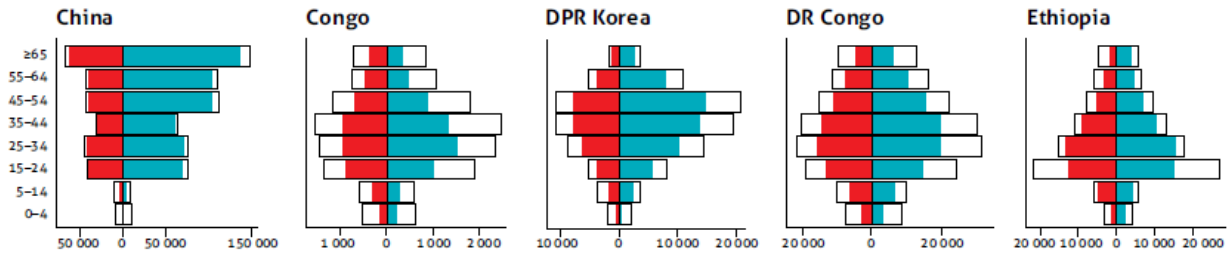
- In worst case scenario, where COVID-19 interventions to reduce social contacts are minimal, but TB health services are badly affected there would be an increase in TB deaths of 23,516 (range 18,560-27,940), 149,448 (85,000-233,602) and 28,631 (19,963-40,011) in China, India and South Africa respectively between 2020-2024, in total 201,595 (123,523-301,553) additional TB deaths in these three countries alone. This would be an increase of 8-14% in cumulative TB deaths in the years 2020 to 2024 (1).

- Another multicounty study under a realistic possibility given the levels of disruption in TB services being observed in multiple countries has shown that a decrease in global TB case detection by an average of 25% over a period of 3 months as compared to the level of detection before the pandemic will lead to a predicted additional 190, 000 (56 000 – 406 000) TB deaths which is a 13% increase in TB deaths, bringing the global total to 1.66 (1.3 – 2.1) million TB deaths in the year 2020 (4).

- This is near the global level of TB mortality in the year 2015. Between 2020 and 2025 an additional 1.4 million TB deaths could be registered as direct consequence of the COVID-19 pandemic (2-4). In 2021 alone, the global TB incidence and deaths would increase to the levels last seen in between 2013 and 2016 respectively – implying a setback of at least 5 to 8 years in the fight against TB, due to the COVID-19 pandemic (4).

- In line with these findings, an important consideration is that health service declines are likely to have a greater impact on patients with drug-resistant TB. In addition, external factors such as increases in poverty and reductions in access to antiretroviral therapy in settings with high HIV prevalence could also increase rates of progression to TB disease (1).

- So what are the implications of these studies for Ethiopia? It is known that Ethiopia is one of the 30 countries with high TB burden (5), and there are similarities. The MoH



- Fig.1. Estimates of TB incidence (black outline) and case notifications disaggregated by age and sex (female in red, male in turquoise), 2018, in some of the 30 high TB burden countries (source: ref. #5)

- has reported that essential health services are affected by the pandemic (6). The pandemic can have its' impact on TB in a number of ways, it could be a result of a number of factors such as fear and stigma, decreases in diagnostic activities and clinic visits, delays in diagnosis and treatment initiation, reduction in case detection and reduced treatment support which are likely to occur. Thus, there could be an increase in TB incidence and death even if there are no current studies describing the situation in the country.

- It is therefore, imperative that in all health facilities delivering health services to TB patients, continued access to diagnosis and care is ensured, together with the collection and regular reporting of TB indicators, to allow the impact on TB to be both measured and mitigated, fear and stigma avoided to visit health services and in the community are stopped. It is also vital that decision-makers and funders recognize the importance of these issues and act to ensure that innovative health service approaches to people-centered TB care are rapidly scaled up, so that the fight to end one pandemic does not worsen another.

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Testing update; Sample pooling as a Strategy to detect Community transmission of COVID 19 Lesson from Molecular Epidemiology studies on COVID-19

- As of June 10, 2020 a total of 165, 151 testes were done in Ethiopia. From these 2, 670 (1.6%) samples were tested positive for SARS CoV2 by RT PCR. Testing in Ethiopia is mainly targeting travellers at mandatory quarantine centers, high risk community members, contacts of confirmed cases, health facility visitors and suspects at isolation centers. It is necessary to undertake community testing to estimate the actual magnitude of the disease and to estimate community transmission as viral spread can happen through people who have mild symptoms or asymptomatic (1)
- To this end a testing strategy that is easy to implement considering the capacity of available laboratory infrastructure and test kits is needed to screen large numbers of asymptomatic people in the community (1).
- There are emerging evidences on the promise of sample pooling technique. Pooling of samples collected before RT-PCR testing of COVID 19 followed by testing individual samples of the positive pool substantially reducing the number of tests needed especially for countries with low burden of COVID 19 (1).
- Recent study from Italy has tested the effect of pooling samples on the sensitivity of RT-PCR. The study, used cycle threshold (Ct) values to compare the sensitivity of positive pools with individual samples that tested positive. The study used a range of pool sizes (4-30 samples) per pool (1). [Note: lower CT values is an indicator for high sensitivity of the assay]
    - CT values of positive pools were between 22 and 29 for the envelope protein gene (E-gene) assay and between 21 and 29 for the spike protein gene (S-gene) assay of SARS CoV2 (1). CT values were lower in retested positive individual samples (figure 1, A, B).
    - The Ct values for both E-gene and S-gene assays in pools and individual positive samples were below 30 and easily categorized as positive.
    - CT value differences between pooled tests and individual positive samples (Ct pool– Ct positive sample) were in the range of up to five. Even if Ct values of single samples were up to 34, positive pools could still be confidently identified (figure 1, C, D).

- It is also indicated that sub-pools can further optimize resource use when infection prevalence is low. Generating a pool of 30 samples from three sub-pools of ten samples can reduce retesting. If the large pool is positive, the three sub-pools are reanalyzed, and then the individual samples of the positive sub-pool. The authors have indicated that, testing of 1191 samples required only 267 tests to detect 23 positive individuals (prevalence 1·93%).

- Another retrospective evidence from Stanford health care virology lab which evaluated 2888 samples with negative routing SARS CoV2 testing and in pool size of 9 or 10 (292 pools) has

indicated that two pools were positive for E gene RT PCR testing. Individual sample testing of the two positive pools detected E and RNA-dependent RNA polymerase (RdRp) gene. This shows pooling samples detected 2(0.07%) missed SARS COV2 cases and they have tested 312 pooled or individual samples to test 2888 samples for SARS CoV2 (2).

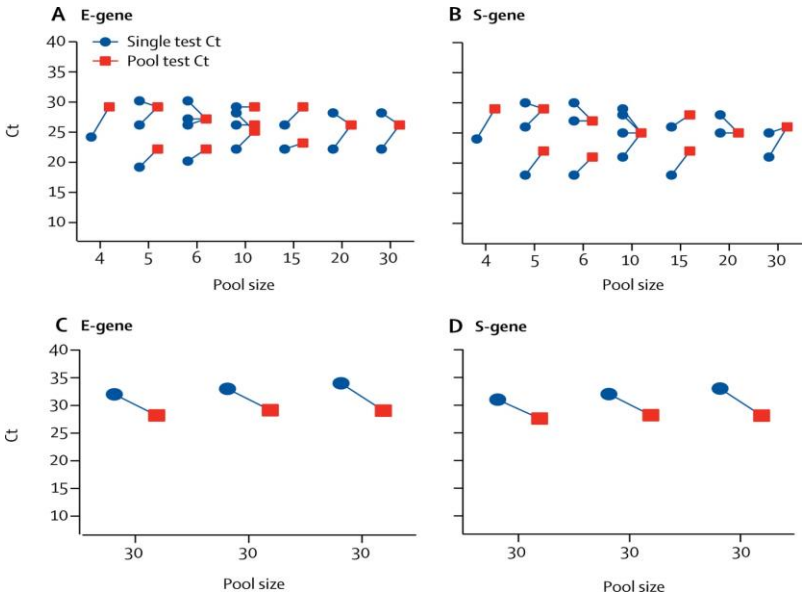

Fig 1: Comparison of CT values between individual samples and pooled samples of different size

Key message from the studies

- ✓ From the above two evidences pooling samples can save resources especially for community COVID 19 screening.
- ✓ Pooling samples might detect the SARS CoV2 cases missed by routine testing given optimization of the pool size and applicability for local context ensured before deploying the pooled testing strategy for community mass screening.

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Impact of COVID 19 control measures on social contacts, transmission & income

- Social contact survey was conducted with 213 residents of five informal settlements around Nairobi in early May 2020, four weeks following introduction of enhanced physical distancing measures by the government including a curfew between 7pm and 5am.
    - COVID-19 control measures in informal settlements appear to have led to a large reduction in social contacts. However, impacts are inequitable, as the poorest quintiles report 1.5 times more contacts than the richest quintile.
    - Control measures reduced physical and non-physical contacts (exchanged at least a few words, face-to-face within 2 metres), reducing the R0 from around 2.6 to between 0.5 and 0.7. Masks were worn by at least one person in 92% of contacts.
    - There is substantial food and economic insecurity due to COVID-19 and the control measures. Around 36% reported the pandemic had caused a complete loss of income, and an additional 50% reported partial income losses. 83% reported experiencing increases in food prices, and three-quarters of respondents reported eating less or skipping meals due to having too little money for food
    - Only 21% reported receiving monetary or non-monetary assistance in the previous seven days and food was the one of the biggest needs that was currently unmet.
    - Negative and inequitable impacts on economy and food security may challenge the sustainability of control measures in the longer term without social protection (1).
- A recent forecast made by World Bank on the impact of COVID-19 on global poverty has estimated how many people will be forced to extreme poverty, measured at the international poverty line of $1.90 per day. Accordingly,
    - COVID-19 will push 71 million into extreme poverty if the outbreak remains at levels currently expected and that activity recovers later this year.
    - COVID-19 will push 100 million into extreme poverty if the pandemic persist longer than expected, forcing lockdown measures to be maintained or reintroduced.
    - It also predicted Sub-Sahara Africa is more likely to be hit hard by the economic impact of COVID 19 (2).

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