

NDMC Evicdence Brief on COVID 19: 001

COVID 19 epidemic trajectory and social distancing; modeling results for Ethiopian and Addis Ababa

- WHO declares COVID 19 outbreak as a global pandemic on March 11, 2020. As of April 04, the outbreak reaches to 205 countries and territories.
- Ethiopia reported its first case in March 13, 2020. As of April 03, 35 cases have been reported. Addis Ababa reported most of the confirmed cases.
- Most of the cases are imported infections with no evidence of community transmission
- Contact tracing and follow up is one of the array of interventions that have been implemented across the country to prevent the spread of the outbreak
- Scenario based mathematical modeling of the outbreak trajectory using empirical data would guide preparedness and response actions.

Key messages

- Currently, about 20 contacts have been identified for each confirmed case, with this
 - About one third of the population would be infected at the peak
 - The outbreak will have protracted trajectory, where the infection peaks two months from now
- Reducing contacts by 50% through enforcing social distancing
 - Averts 15 and 0.87 million infections that would have occurred at the peak at the national level and in Addis Ababa respectively.
- To shape the outbreak trajectory; to reduce infection and case fatalities early capturing of community transmission is crucial through:
 - Increasing testing and contact tracing, considering mobile tracking
 - Enhance case detection through revision of case definition, diagnostic criteria and surveillance approaches

 Cascading screening and diagnosis to health facilities to early capture symptomatic cases as Sever Acute Respiratory Infection (SARI)

Distribution of laboratory confirmed cases and contacts across Ethiopia March 30: 1 Travel led from Dubai March 30: 1 Travelled from USA. had contact with 13 people March 31, 1 Travelled from Australia Apr-01: 1 no travel history Afar 2 Gambela Southern Nation 1st case in Ethiopia March 13 traveled from Burkina Faso. 11 cases all travelled from Dubai, in different days and flights 9 No travel history and confirmed on different days. Nationalities, and Peoples 2 Travelled from Australia on different days and flights. March 27: 1 no travel history 2 Travelled from Belgium on different days and flights. 2 Travelled from Congo Brazzaville at different days & flights contact with 29 person ch 29: 2 no travel history 1 Travelled from Israel on different days and flights. ote: overall 923 contacts

COVID 19 outbreak trajectory in Ethiopia

 At the peak of the outbreak about 60% of the population would be exposed to the virus

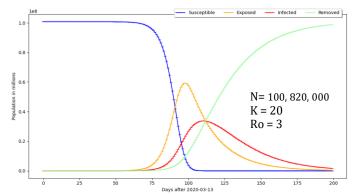
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About the team : This work is produced by a team of experts from EPHI NDMC; FMoH PPMED; AAU, School of Public Health; University of Gondor and a COVID 19 technical working group from the Addis Continental School of Public

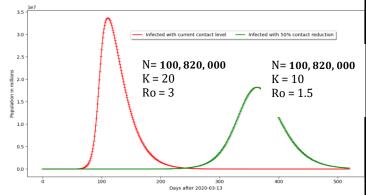
- By the end of May 1.94 million people would be infected with the virus
- The outbreak will reach to peak on day 110 infecting likely 33, 697,791 people



NB: days on the x-axis starting from the date the first case was reported

Effect of social distancing on the outbreak trajectory at the National level

- Social distancing reduces the number of contacts an infected person would have.
- 50% reduction in contacts could avert 15,442,351 of the infections that could have occurred at the peak

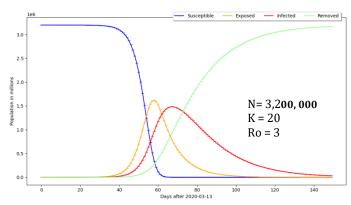


NB: days on the x-axis starting from the date the first case was reported

Outbreak trajectory in Addis Ababa

 At the peak of the outbreak, > 50% of the population would be exposed to the virus

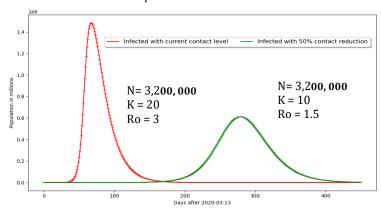
- By the end of April about 235,000 people would be infected
- The outbreak will reach to peak on day 67 likely infecting 1,484, 238 people



NB: days on the x-axis starting from the date the first case was reported

Effect of social distancing in Addis Ababa

 50% reduction in contacts could avert 872,243 of the infections that could have occurred at the peak



NB: days on the x-axis starting from the date the first case was reported

Recommendations

- The governments need to enforce social distancing
- The public should obey the restriction posed by the government for their own sake
- Expand testing for early diagnosis of cases and to contain community transmission