NDMC Evicdence Brief on COVID 19: 001

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

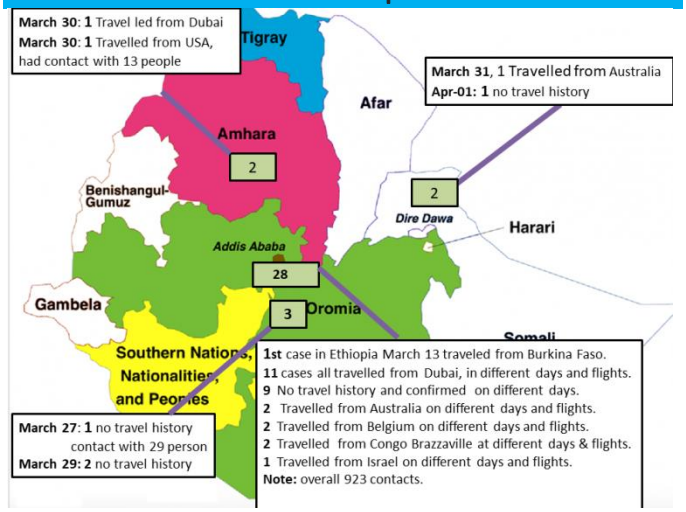
- WHO declares COVID 19 outbreak as a global pandemic on March 11, 2020. As of April 04, the outbreak reaches to 205 countries and territories.
- Ethiopia reported its first case in March 13, 2020. As of April 03, 35 cases have been reported. Addis Ababa reported most of the confirmed cases.
- Most of 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



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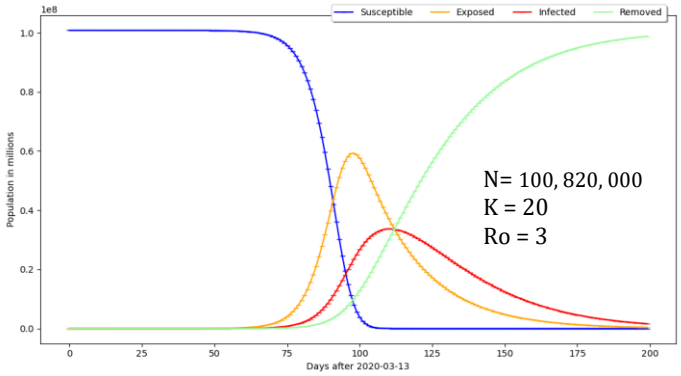
About the team : *This work is produced by a team of experts from EPHI NDMC; FMoH PPMED; AAU, School of Public Health; University of Gondor and a COVID 19 technical working group from the Addis Continental School of Public*

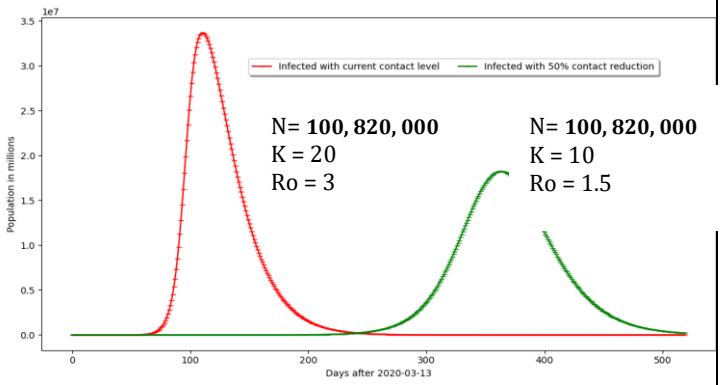
- By the end of May 1.94 million people would be infected with the virus
- The outbreak will reach to peak on day 110 infecting likely 33, 697,791 people



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

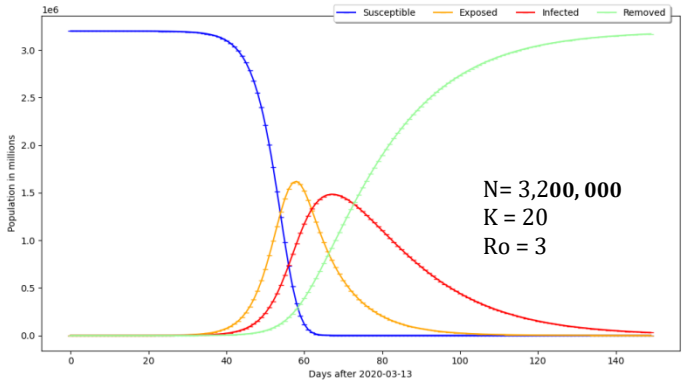
- Social distancing reduces the number of contacts an infected person would have.
- 50% reduction in contacts could avert 15,442,351 of the infections that could have occurred at the peak



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

Outbreak trajectory in Addis Ababa

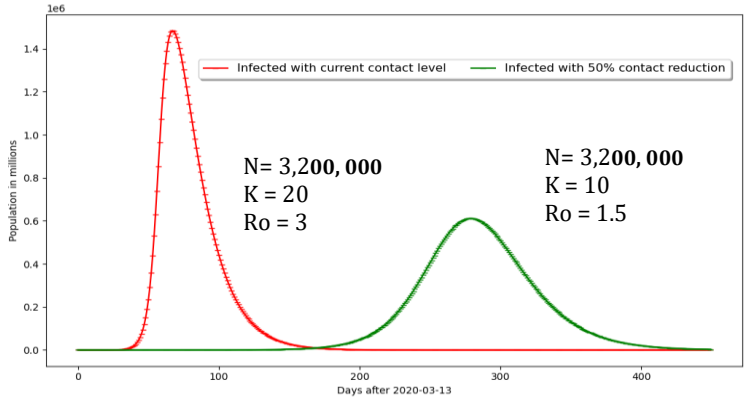
- At the peak of the outbreak, > 50% of the population would be exposed to the virus
- By the end of April about 235,000 people would be infected
- The outbreak will reach to peak on day 67 likely infecting 1,484, 238 people



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

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