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Webinar on COVID-19 in India: *An Actuarial Perspective*

26 May, 2020; 1030 to 1200 IST Mumbai

Response to the questions raised by attendees in Webinar by the IAI pandemic Research Group

S. No	Question	Reply
1	As the recovery rate is increasing and death rate is decreasing can we conclude that the peak period of infection is over?	Given the extent of uncertainty in human behaviour/Government actions (lockdown, testing, tracing, promptness in medical attention) and the unfamiliar nature of the virus, it is very difficult to predict the peak. A number of factors affect this - weather conditions, human behaviour, Government intervention, virus mutation being the main ones. Also some epidemiologists suggest that there might be subsequent waves so a peak in the current wave might not be the ultimate peak. Increasing recovery rate and decreasing death rates will contribute to increase in closed cases. However, one can say that we have gone past the peak in the active cases only if the rate of incoming new cases is overtaken by the combined rate of recovery and deaths.
2	Considering the current situation, what will the date from which in India the number of new infected cases will come down and below 1000 case per day.	
3	What would be the projected peak numbers and when (Time period)?	
4	Please suggest the Impact of increase in cases due to interstate migration	We have not modelled the impact of inter-state migration explicitly as no statistically credible data is available publicly. The impact of increased social interaction is implicit in the transmission rates in the worst case scenario. Speaking in general, the migration effect on the infection will be impacted by the population density in the migrated areas, the volume of migration, extent of asymptomatic infection within the migrated clusters during migration and so on; The risk of cluster spread due to asymptomatic cases within those migrated clusters is one of the biggest risks currently facing us.
5	nbr of cases b/w lockdown ends and worst scenarios could also be due to the increased testing, do you think? Given that the change in testing since previous phases not accounted for in the model?	We have not explicitly considered the impact of changes in testing strategy in the model. So the increase in cases from 'lockdown ends' scenario to 'worst case' scenario in the model is not due to a change in testing strategy. Various scenarios have been shown to present a variety of outcomes if the transmission rate varies.
6	Can you articulate USP of this exercise?	The uniqueness of this exercise is directly derived from the uniqueness of the world-wide crisis situation that we are facing. However, to be able to research, analyze, model and predict while the situation is still evolving makes it a challenging and rewarding exercise at the same time. We hope we were able to cover the topic widely and deeply enough to whet the interest of a wide audience. Based on the feedback given, we are also working towards refining, adding more sub-topics and hope to present further findings soon.
7	could there be any complementary disease to patients who are diagnosed with covid-19	Epidemiologists are still studying the nature of the virus and its effects. It has been found that various strains of the virus exhibit different characteristics and symptoms. An array of symptoms/side effects have been found - fever, dry cough, lung infection, stomach disorder, mild to serious blood clots, effect on white blood cells, effect on nervous system, kidney damage and more.

8	What is the price for those who are directly fighting the corona? I mean corona warriors?	The risk being taken by those on the frontline is immense and their constant / regular exposure is definitely increasing their likelihood of getting infected. Their help during this time is unavoidable particularly that of the medical staff. It is imperative to protect them from getting infected. We hope that we have a success story of being able to protect all of our frontline workers rather than face a tragedy of losing their lives in this battle.
9	How is the sudden surge in covid-19 claims (unaccounted for in reserves till now) affecting reserves calculations and approximations?	As much as we have known from speaking to insurance companies, they have not witnessed a surge in claims yet. This could be because of (i) only a small proportion of population is insured in the first place so the proportion of insured population contracting the infection is a further subset and therefore a clear surge is not evident or (ii) the companies have incurred these claims but have not been reported by the policyholders yet. But at the same time, insurers are setting aside additional provisions for the impact of COVID-19. The ultimate impact on insurer's financial statements will only be known as the situation unfolds in the future.
10	can we ask IRDAI to get some data for institute on COVID19 experience	At this stage the analysis is at the population level because data is believed not to be credible enough for subsets e.g. insured population. However, in future that could be very useful. The availability of latest data collated from various insurance companies could pave way for meaningful analysis.
11	The insurance companies don't usually cover pandemics. Then why is it by default to assume Mediclaim cover CoVID-19. Has government made it mandatory to include this?	In the Indian context there is no specific exclusion with respect to pandemic or epidemic. Insurers via General Insurance Council & FAQs on their own website have issued clarity in this regard. https://www.gicouncil.in/gi-council-initiatives/faqs-during-the-covid-19-lockdown/
12	is there any longer term projections from the model to benchmark any product pricing as is being expected in current scenario	The model was deliberately produced only for the short term given the high uncertainty in the factors that influence the outcome such as government actions, human behaviour and medical advancement. Thus, a long term view from the model is not available.
13	As India is under-penetrated in health insurance and the number of people infected with Covid-19 is increasing, will people look at health insurance as a necessity now?	It is still early to comment on this as human behaviour can change after the passing of a crisis. However, insurers and distributors currently have reported an increase in enquiries relating to health insurance.
14	If someone is asymptomatic at the time of buying the cover? will you still honor the claim ? As he himself might not know that he is infected?	All new policies will have a standard 15 days of waiting period, to account for anti-selection. This is also part of guidelines issued with respect to standard COVID product, which all insurers are expected to offer. All claims belonging to this waiting period are likely to be rejected.
15	What kind of innovation is required in health insurance to make it sustainable for the overall ecosystem and relevant for the customers?	Given the transformation currently taking place it is very difficult for us to comment on the innovations that would come in the future. However, if history is any guide there will be innovations possibly accelerated by the advent of COVID-19.

16	What's your take on IRDA's recent circular making it mandatory for employers to provide medical insurance to their employees?	Any push to increase health insurance cover is a welcome step. We hope the quantum of cover opted is meaningful and is continued as a long term policy by the employers
17	Any reinsurer in India is offering COVID cover risk premium for life insurers.	The group is not aware of any such COVID specific offering in India at this moment.
18	The Hospitalization cost would be dependent on private/government hospital. Isn't it? Shouldn't insurers take this into pricing of the product?	Utilization patterns are taking into account while pricing. Please note Insurers do incentivize choice of economical room options and many have plans with preferred network (where they have negotiated tariff).
19	Is the Average Claim Size based on only indemnity cases or includes Benefit payments also. Small Sum Insured benefits are offered by lots of Companies like ICICI, Digit and Bajaj...	We believe the question is directed at the ACS poll. We will not be in a position to confirm. It can be noted that this is an industry wide data (as reported by insurers) and majority of pay-outs can be expected to be indemnity based.
20	Do you think contracts can be changed retrospectively by regulation to cover BI claims?	We are not aware of any such proposal. It might put a significant stress on the insurers if contracts are changed retrospectively. Premiums have been charged proportional to the risk covered under the standard. Ultimately this is a question for the lawyers and courts to decide.
21	Do insurers in India offer CAT pandemic covers?	Life insurers seek Catastrophe cover for their retained portfolio. One of the covered events is pandemic and epidemic event. Some of the reinsurers do offer cover for pandemic/epidemic events.
22	Usually income protection plans are long term bcoz things can happen in the long term and we are just looking after our family from uncertainty. Why will people take short term income protection plan, once the pandemic is over or there is a vaccine?	One example could be that professional and self-employed who see not being able to work due to quarantine as too high a risk for them to bare on their own without the support of insurance. The cover could be structured similar to personal accident plans with temporary disablement benefit. Yes, income protection plans are usually long term. Once the pandemic is over arguably there could be less demand for short-term covers.
23	From Actuaries perspective it is too early vide Pricing although apt taking into account recurrence of same, as vaccination or medication is bound to hit shortly recurrence?	Yes it is a valid point. We will have to see how the experience evolves
24	Would love if the following points are addressed during the detailed model discussion:	1. Our models don't currently directly incorporate testing rates. The SEIR model does however, provide transition between infectious state and quarantine state. Increased testing rate

25	1. How to incorporate testing rates with projections? 2. How does the hospital and administration stress rate relate to the death rates? 3. How can a company use a similar model structure to predict the impact of Covid on their employees and predict how many will get infected? 4. The SEIR model is a closed model as known, how does one alter this in the future to incorporate inflows and outflows out of the population when international travel starts? Would love to know if any thought has been given to the above questions.	could potentially reduce the time taken between an individual becoming infectious and getting into a quarantine facility and thereby reduce the spread. 2. As of now our models do not consider the impact of stress on medical facilities and personnel, but it might be a model enhancement we consider in the future if there is a need and availability of sufficient data. 3. The model currently works on the country in aggregate and may not work accurately when applied to a small subsection of the country (such as the employees of a company). 4. For now SEIR provides a sense check, and is not the primary model used for projections. Unless the travel opens up in a big way, having a major impact on the inflow / outflow, we do not believe the impact would be significant on the results.
26	The actual number of infections would actually be far higher, due to lack of testing in India. Has that been considered somehow?	The model implicitly allows for the current rate of testing in the country (and was tested to produce no significant difference in the results even if testing was added as a parameter given the current testing rates). The model explicitly allows for asymptomatic cases (70%) - or in other words cases that are "able to infect" but not being identified given the current testing strategy.
27	The transmission rate is applied on the active cases or the total confirmed cases?	The transmission rate is applied on all lives that are currently asymptomatic, i.e. have not displayed any symptoms as yet and have there not been quarantined and can, therefore, spread the infection. It assumes that the confirmed cases are in fact being quarantined and therefore unable to infect.
28	Have we considered different asymptomatic and symptomatic transmission rate in the projection by considered different population bucket?	
29	Given the way economy is opening up, inadequate social distancing, inadequate medical facilities available are the models having capacity to project unimaginable spike in number of cases?	The model works on the transmission rates reflecting these changes in the behaviour. The worst case scenario in the report projects one such eventuality
30	Were the projections for transmission based on HIRD model?	Yes. The HIRD model was the primary model used for projections.
31	Most outbreaks are characterized by waves of spread. This is caused by the exhibition of seasonality (in the ensuing stages of the epidemic). Do you think the lack of this characteristic in the aforementioned models will affect the accuracy of its predictions (in the long run)?	The models are appropriate for use only in the short run given the uncertainties around the factors such as government policies and social behaviours that determine the transmission rates.
32	So as per SEIR model, how one can differentiate between people in S state and E state.. many people might not know whether they have come into contact with infected.. S state people could be one staying at home for whole of lockdown.. and Exposed to those who are moving out for any reasons.. Just a thought.. Thank you.	The model assumes that in effect the entire population of India is in state S unless they move to state E due to exposure. The crux of this pandemic lies in the challenge of knowing how many have moved to state E. Given the limitation of the data, we could not calculate the transition from S to E state. We, instead, used the confirmed cases (on a chosen base date) to estimate the number of people

33	Hi, the presentation was great. My question was on the SEIR model, can the "exposed" state & "susceptible" state be combined? What will the impact	who may have got exposed using an assumption of incubation period. Hence, the transition from Susceptible to Exposed state was not required.
34	What will the eventual impact*?	
35	While modelling, was differentiation done between death with Covid 19 and death by Covid 19?	No. We looked at total confirmed deaths as per the government data.

As on 20 July 2020