COVID-19 in Indonesia: Where Are We?

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In-country that has 265 million population[1] and carrying a double burden due to changing pattern of morbidity, mortality and disability[2], a prompt and effective disease control should be unarguable. By 3.5 months since the 1st case officially confirmed, Indonesia recorded more than 1000 new cases daily. The national trend shows no sign of decrease as 19 September 2020 the report sets a new mark of 4000 new cases in a day.[3] Earlier this month, President Jokowi affirms the national fatality (of detected positive cases) is above the global average.[4] Matching to decentralized governance, reported transmissions and responses on controlling it is observed varied across the regions.

The concept of controlling disease transmission relies on contacts suppression; and on the longer end, relies on vaccinations. As 27 September 2020, no vaccine is approved for use in the general population. Until then, countries should implement early, widespread, and strict disease mitigation strategies. While much remains to be learned on COVID-19, global evidence assert at least three strategies at the population level contributes to flatten the curve: mobility restriction, testing and isolation and rigorous contact-tracing.[5-9] At the individual level, strict compliance on practising preventive behaviours: physical distancing, mask-wearing and proper handwashing, could reduce risk of infection.[8,10] While many are struggling, some countries that have achieved low incidence of COVID-19 exhibit exemplary disease surveillance and health information system. Here in Indonesia, both are works in progress; challenging the much-needed evidence-based actions. As such, how exactly Indonesia works on suppressing this unprecedented pandemic gain us costly lessons learned.

Notably, the health information system must be strengthened to record disease discourse from contact to an outcome. Reliable, quality and timely information system are unquestionably pivotal. This might sound obvious, but the fact that many COVID-19 are asymptomatic[11] and some would develop symptoms on the estimate of 2-14 days12 makes a substantial number of transmissions could go undetected; especially for countries that test only the symptomatic. Some epidemiologists suggest Indonesia does not yet have an epidemic curve, and the notion might not be baseless. Analysis of COVID-19 data shows testing delay between three to seven days13 implying report of positive cases is not a timely reflection of actual disease transmission on the field. For Indonesia that is constrained by its limited testing capacity, delays or mistakes in disease control would be devastating, if not, catastrophic.

Indonesia is not on entire absences of actions, but the epidemic calls for more. The central government called for social distancing two weeks after the first case confirmed and regulation on the large scale social distancing (*Pembatasan Sosial Berskala Besar*/ PSBB) that restrict non-essential population mobility is enacted by April 2020. The provincial government can declare PSBB upon central government approval. The capital, DKI Jakarta, was first to act on school and business closures

on mid-March then went full PSBB on 10 April 2020. Such mobility restrictions were found effective on suppressing transmission, the COVID-19 effective reproduction number (Rt) decreased from 2.0 in April 2020 to 1.2 in June 2020 when at least half population complying to staying at home.[13-15] The Rt steadily increased by June 2020 when it's relaxed.[13] Understandably, mobility restriction is not feasible for the long run, but Wuhan showcased an uncontrolled epidemic is damaging and traumatic for personnel, community and system. Acknowledging strict and long term PSBB is no longer a viable option, Indonesia must outpace the transmission with other interventions.

As mentioned, suppressing COVID-19 transmissions demands population involvement to comply and be discipline on proven effective preventive behaviours: physical distancing, proper mask-wearing and handwashing with soap.[8,10] To our knowledge, there is no systematic measurement of preventive measures coverages in the population. Some telephone-based and online surveys reported high coverage of face mask use. Nevertheless, direct interview of preventive measures tends to have social desirability bias.[16] Our model indicates only high coverage of preventive measures compliance coupled with high coverage of testing, tracing and isolation would result in a decrease on Rt.[14] Similar to the documentation on preventive behaviours, there is no periodic information of these three indicators yet.

Such limitation on surveillance and information system intensifies needs on Indonesia health systems strengthening. Recent evidence outlines test, tracing and isolation are effective in suppressing COVID-19 transmission.[8,17,18] Minimizing testing and tracing delay, less than four days with coverage of 80% close contacts could prevent and reduce onwards transmission.[18] The evidence base for tracing delay and tracing ratio in Indonesia is hindered by limited of data. But the frail disease surveillance and detected reporting delays implies testing delay remains an issue, and contact tracing is inadequate. No or weak contact tracing would let the chain of transmission free and undetected; opening possibility of transmission would grow exponentially.[19]

That we need to more is indisputable. The vaccine is not a magic bullet; it is a long-term control measure and should be a complete series of careful and precise examinations. Indonesia will also likely require high coverage of vaccination to achieve herd immunity. At present, if there is no significant improvement in the coverage of preventive measures in the population and disease surveillance system, our hospital will be overwhelmed, and case fatality will be devastating.

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