Research from 3 scientists: 40 measures to combat Covid-19 in a timely, effective manner, to stop epidemic peaks, not to cause hospital overload

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Craig Dalton, an epidemiologist at Newcastle University recently published a preprinted version of the scientific paper on the Social Science Research Network (SSRN). The study was conducted by Dalton and his two colleagues, Dr. Stephen Corbett at the University of Sydney and Anthea Katelaris at the Australian National University.

In particular, the trio of scientists analyzed SARS prevention strategies in 2003, the reality and the experience of fighting against the Covid-19 epidemic in China and also the annual flu prevention campaigns to offer about 40 measures. Cheap and timely measures help the world prevent the spread of current disease.

Epidemiologist Craig Dalton at Newcastle University

It is worth mentioning that although Dalton's study was not yet reviewed, these measures were immediately adopted by the US government, edited into a set of guidelines for the United States.

Deborah Birx, White House corona virus response coordinator and Anthony Fauci, director of the US National Institute of Allergy and Infectious Diseases, described the set of guidelines at a press conference on Monday.

Birx said the new set of guidelines emphasizes the common sense of the people, taking practical measures to keep workplaces, schools and houses safe. It is based on a scientific paper by Australian epidemiologist Dalton.

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According to research by Dalton and colleagues, governments and countries can take many powerful measures to intervene and prevent the spread of Covid-19 including: quarantine isolation, blockade of cities. , closing schools, canceling gatherings .

However, these measures are often implemented late, because they need to assess their economic and social impacts. Taking advantage of this time period, Covid-19 may have flared up and spread rapidly, rendering the subsequent measures ineffective.

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That means preventive measures should be taken as quickly as possible. The goal is to slow the spread of disease, reduce the spread of infection, and reduce the severity of cases.

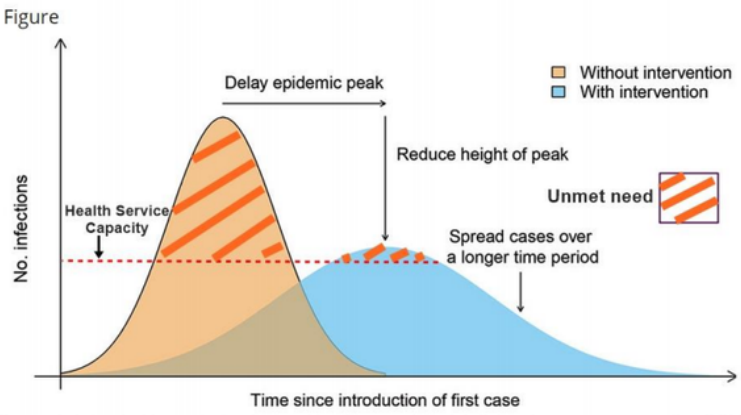

Figure 1: Intended impact of enhanced hygiene and social distancing measures on the COVID-19 pandemic adapted from Fong.[8]

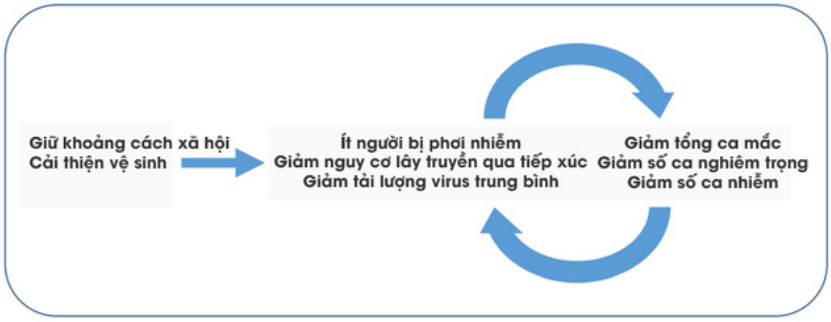

Figure 2: Conceptual model of how pre-emptive interventions with a negative multiplier effect could impact an impending epidemic

Dalton's measures are designed on two principles: Keeping social distance and improving hygiene. According to the model he built, these measures could delay the peak of the epidemic, limiting the overload for hospitals and intensive care units.

It allows health care workers to have better time to take care of patients, or when they themselves are infected with Covid-19, they can recover and return to work. Delaying the peak of the epidemic may also help hold on until we have a vaccine to deal with Covid-19.

" *We recommend that low-cost interventions be implemented before the disease appears and that contagion is expected in the community. These interventions should be considered as they can help reduce the overall number of cases and severity of cases* , "Dalton and colleagues wrote.

The following is a summary of the measures in his research published on the Social Sciences Research Network (SSRN):

MEASURES AT THE WORKPLACE

1. Do not shake hands

2. Propagate the practice of coughing and sneezing properly (but still require sick employees to be isolated at home)

3. Bringing online meetings to the default standard

4. Postpone large meetings

5. Hand hygiene is required at the entrance

6. Remind employees to wash their hands frequently via email

7. The staff has lunch at his desk, not gathered at the cafeteria

8. Turning hygiene rules into a fun game (Gamifying), for example [challenging employees] not to touch your face

9. Make sure those who are sick stay home, if the sick person still goes to the company will be isolated immediately

10. Hold necessary outdoor meetings, if possible

11. Employees with sick family members should stay at home

12. Disinfect frequently surfaces with high frequency of contact, many people come in contact

13.Work at home if possible and consider working shifts at home if employees do not lose remote work productivity

14. Consider opening windows and adjusting air conditioning [heat up]

15. Restricting food processing and cooking activities at work, not sharing and distributing food at work

16. Assessing risks in the working process of employees

17. Enhancing hygiene and screening of food processing staff (canteen) and their close contacts

18. Analyze the root cause of events that can create crowds. Prevent them through rescheduling, shift arrangement or complete cancellation

MEASURES AT SCHOOL

1. Supervise hand hygiene at the entrance and hand hygiene regularly during the day

2. Deferring activities that require concentration of multiple layers and blocks

3. Propagate the practice of coughing and sneezing properly (but priority should still be given to teachers and sick students not to go to school, recommend that they stay at home isolated)

4. There is a strict policy to force sick teachers, students and school employees to stay home

5. Turn hygiene rules into a game of interest (Gamifying), for example [challenging students] not to touch their faces

6. Schedule regular hand washing

7. Regularly disinfect surfaces with high frequency of contact, many people come into contact

8. Study outdoors if possible

9. Consider opening windows and adjusting air conditioning [hyperthermia]

10. Enhancing hygiene and screening of food processing staff (canteen) and their close contacts

11. Consider potential after-school activities that lead to gathering children from multiple grades and ages

MEASURES AT HOUSEHOLD

For all households:

1. Increase hygiene, wash hands

2. Turn the rules of hygiene into a fun game (Gamifying), for example [challenge students] not to touch their faces

3. Regularly disinfect surfaces with high contact frequency

4. Post the " *Come in if you are healthy* " sign on the door

5. Increase indoor ventilation speed by opening windows or adjusting air conditioners

6. Propagate practicing coughing and sneezing properly

For households with members who are ill, in addition to the above measures, additional implementation:

7. Sick family members are provided with a private room if possible and only one person to care for them is assigned

8. The door to the patient's room is closed

9. Wear a regular medical mask / mask for both the infected and caregiver

10. Consider stronger safeguards or relocate to people over age 65 in the family or people with underlying medical conditions.

MEASURES AT TRADE, ENTERTAINMENT AND TRANSPORT CENTER

1. Encourage hand hygiene at the entrance

2. Use electronic payment to limit cash usage

3. Regularly disinfect surfaces with high contact frequency

4. Minimize crowds by adjusting and scheduling reservations, encouraging online purchases, limiting the number of attendees

5. Enhancing hygiene and disease screening for food processing staff and their close contacts

6. Strengthen ventilation and adjust the air conditioner

7. Public transportation staff / taxi / carpool: open car windows whenever possible, increase air flow in the vehicle, disinfect surfaces with high frequency of contact.

Reference *Science, Nytimes, SSRN*