WEBINAR TRANSCRIPTION:

WHAT DO WE KNOW ABOUT "WHAT WORKS" TO FLATTEN THE CURVE OF THE COVID-19 EPIDEMIC?

Presented by Joshua Sharfstein and David Peters

April 8, 2020

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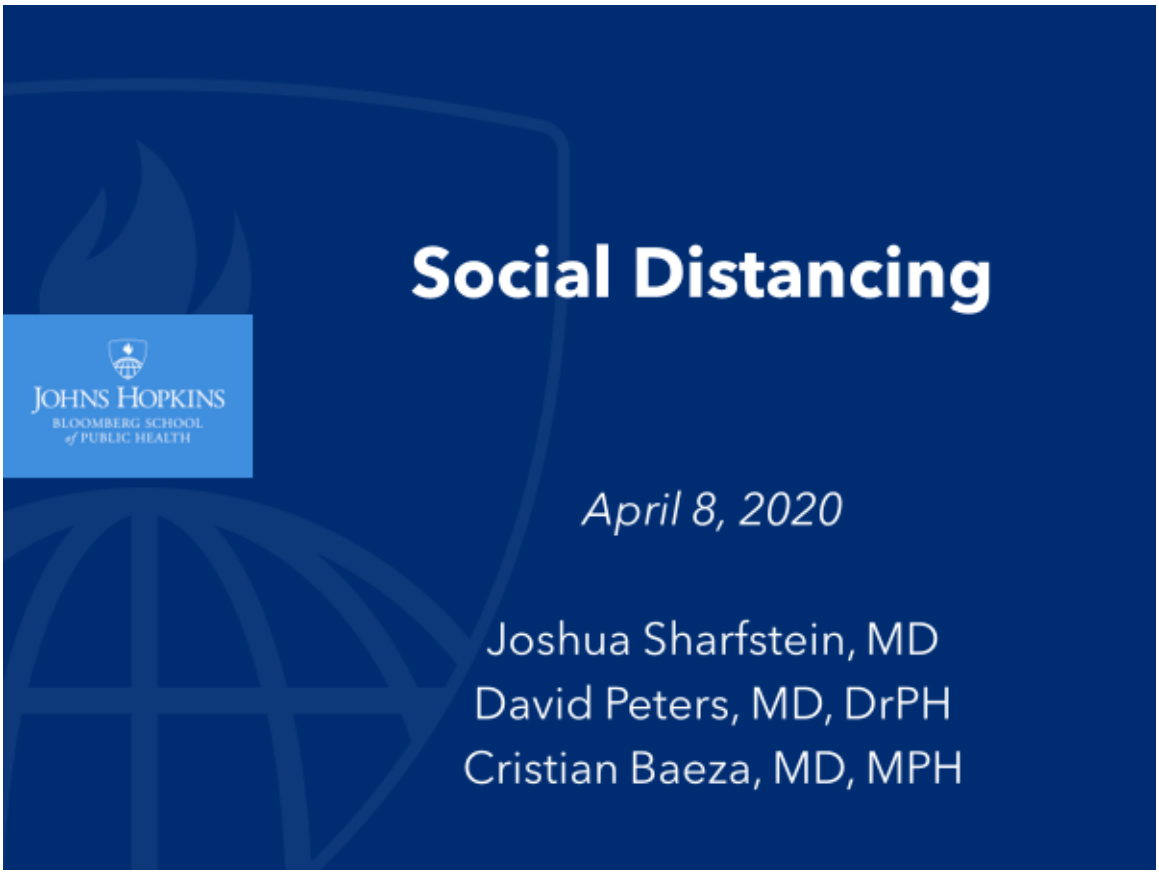
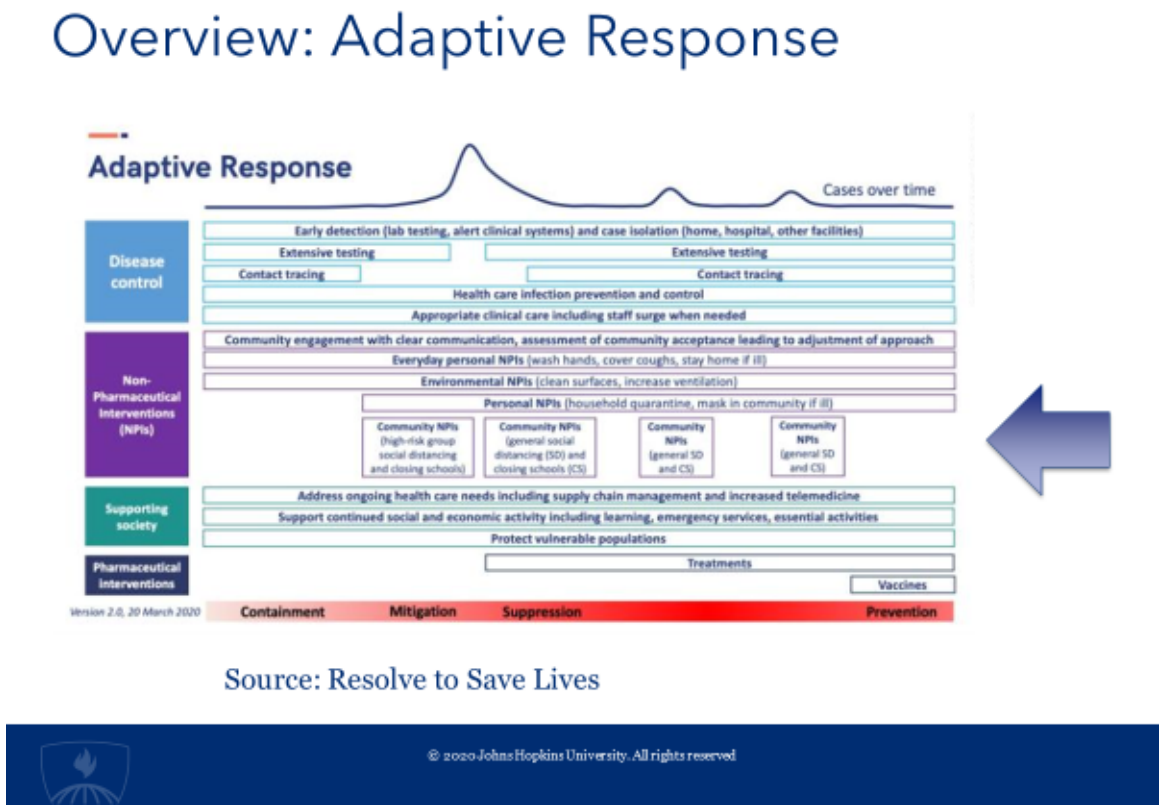


SOCIAL DISTANCING, INTRODUCTION

Minute 00:04:18

We were asked to talk about social distancing, the evidence on social distancing and then, a little bit more generally, about the Corona virus response in low- and middle-income countries.



Overview: Adaptive response

Minute 00:04:29

This is a slide from Resolve to Save Lives. It gives an overview of the response that is necessary to the Corona virus. It is described here as an adaptive response.

It has several components. One component, which you can see is called ‘disease control’ at the top. That includes the testing, the tracing of contacts, isolation and other services. It also includes health care infection control and clinical care.

Then there is a big area here, which we will talk more about, called ‘non-pharmaceutical interventions’, which include community engagement, community acceptance of important measures, like every day personal interventions like hand washing and covering a cough. The community engagement is really engagement about the entire response. This area also includes environmental interventions like cleaning commonly used surfaces, increasing ventilation and quarantine for people who are exposed. And then there is this area of non-pharmaceutical interventions in the community, which really is social distancing, which we will come back to.

In addition, there is hopefully pharmaceutical interventions and efforts to support society to be able to survive during this difficult period, where all these other steps have to be taken and are sometimes very challenging to implement.

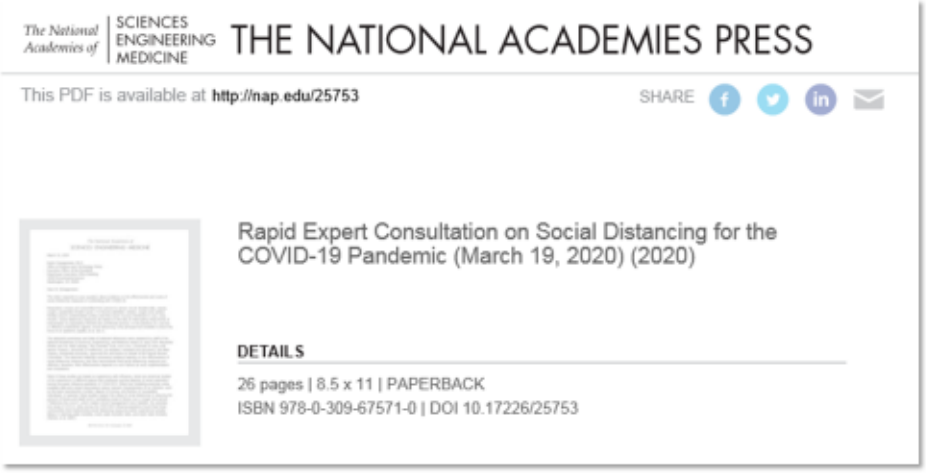
So today we are going to talk about the area marked with the blue arrow, which is what you do at the community level through social distancing that reduces the spread of the virus. A virus that none of us have immunity to. When it started a few months ago the entire world was susceptible. There is no treatment known to be effective. There is no vaccine that has shown to be effective and so what we really can do to stop the spread is to give the virus fewer opportunities to jump from person to person. And one of the major ways we do that is through social distancing.

Community Interventions

Minute 00:06:52

I am going to talk about several community interventions. I am going to talk about workplace measures, school closures, travel restrictions, restricting large gatherings and the use of masks. We were asked to talk about some of the data for that.

National Academies of Science, Engineering, and Medicine



National Academies of Science Engineering and Medicine

Minute 00:07:06

Some of the data that I will show is from the National Academies of Science, Engineering, and Medicine, which recently did a consultation on this for the federal government in the United States. And there is a nice report that they did.
So first I am going to talk about the evidence that these measures work from influenza and then we will talk about COVID.

These measures have been studied much more extensively for influenza.

Evidence from Influenza

- Workplace social distancing reduces peak attack rate. (Ahmed, 2018)

Workplace Social Distancing						
Effectiveness of workplace social distancing measures in reducing influenza transmission: a systematic review	Ahmed et al.	2018	BMC Public Health	Influenza	Systematic review of the evidence of effect on social distancing in non-healthcare workplaces (e.g., telecommute policies) to reduce or slow the transmission of influenza	• Social distancing in non-healthcare workplaces settings was associated with a reduction in ILI and seroconversion to H1N1, and delayed and reduced the peak attack rate • Effectiveness declined with higher basic reproduction number values, delayed triggering of social distancing, or lower compliance. • Important to note that these findings were primarily supported by modeling studies.

Source: NASEM

Evidence from Influenza

Minute 00:07:28

I am going to go through the evidence relatively quickly but I am sure we can share the slides after the presentation. One of the studies looked at many other pieces of research and found that workplace social distancing, basically reducing the number of people who are coming to work and changing the way the work place is structured, reduces influenza transmission substantially.

Evidence from Influenza

- School closing reduces and delays the spread of infection. (CDC, 2012)

Emergency preparedness and response: School dismissals to reduce transmission of pandemic influenza	CDC – Community Preventive Services Task Force	2012	N/A	Influenza (Pandemic)	CDC's Community Preventive Services Task Force, and evidence-based guidelines group, conducted a **systematic review** in 2012 of school dismissals to reduce transmission of pandemic influenza	• The Task Force recommended pre-emptive, coordinated school dismissals during a severe influenza pandemic (a pandemic with high rates of severe illness such as that experienced in 1918) based on sufficient evidence of effectiveness in reducing or delaying the spread of infection and illness within communities. • This recommendation was based on findings of assessments of measures taken during the 1918 pandemic and modeling studies that indicated that benefits of timely, coordinated, and sustained dismissals outweigh the expected societal and economic costs.

Source: NASEM

Evidence from Influenza

Minute 00:08:04

In addition, there is evidence from influenza that school closing can reduce transmission of influenza.

Evidence from Influenza

- Travel restrictions allow for modest delay and reduce incidence by 3% (Mateus, 2014)

Effectiveness of travel restrictions in the rapid containment of human influenza: a systematic review	Mateus et al.	2014	Bulletin World Health Organization	Influenza	Systematic review to assess evidence for restrictions in travel affecting the spread of influenza.	• Internal travel restrictions and international border restrictions delayed the spread of influenza epidemics by one week and two months, respectively. • International travel restrictions delayed the spread and peak of epidemics by periods varying between a few days and four months • Travel restrictions reduced the incidence of new cases by less than 3%. • Impact was reduced when restrictions were implemented more than six weeks after the notification of epidemics or when the level of transmissibility was high. • Travel restrictions would have minimal impact in urban centers with dense populations and travel networks. • No evidence that travel restrictions would contain influenza within a defined geographical area. • Extensive travel restrictions may delay the dissemination of influenza but cannot prevent it

Source: NASEM

Evidence from Influenza

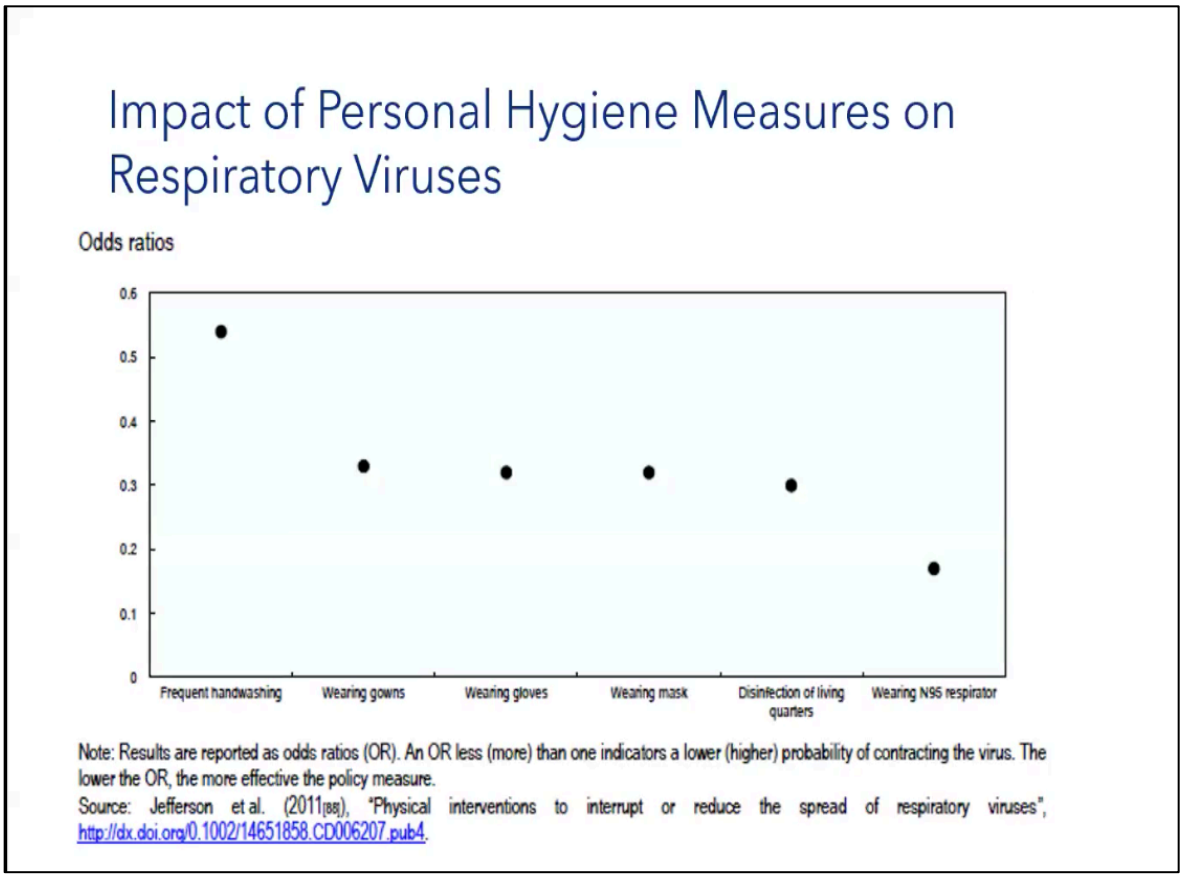
Minute 00:08:18

Travel restrictions have been shown to delay the start of an influenza outbreak but they have only a modest effect on how bad it gets. Once influenza gets somewhere then it will spread a lot, but it could delay a little bit the timing of an influenza outbreak.

Evidence from Influenza

Minute 00:08:36

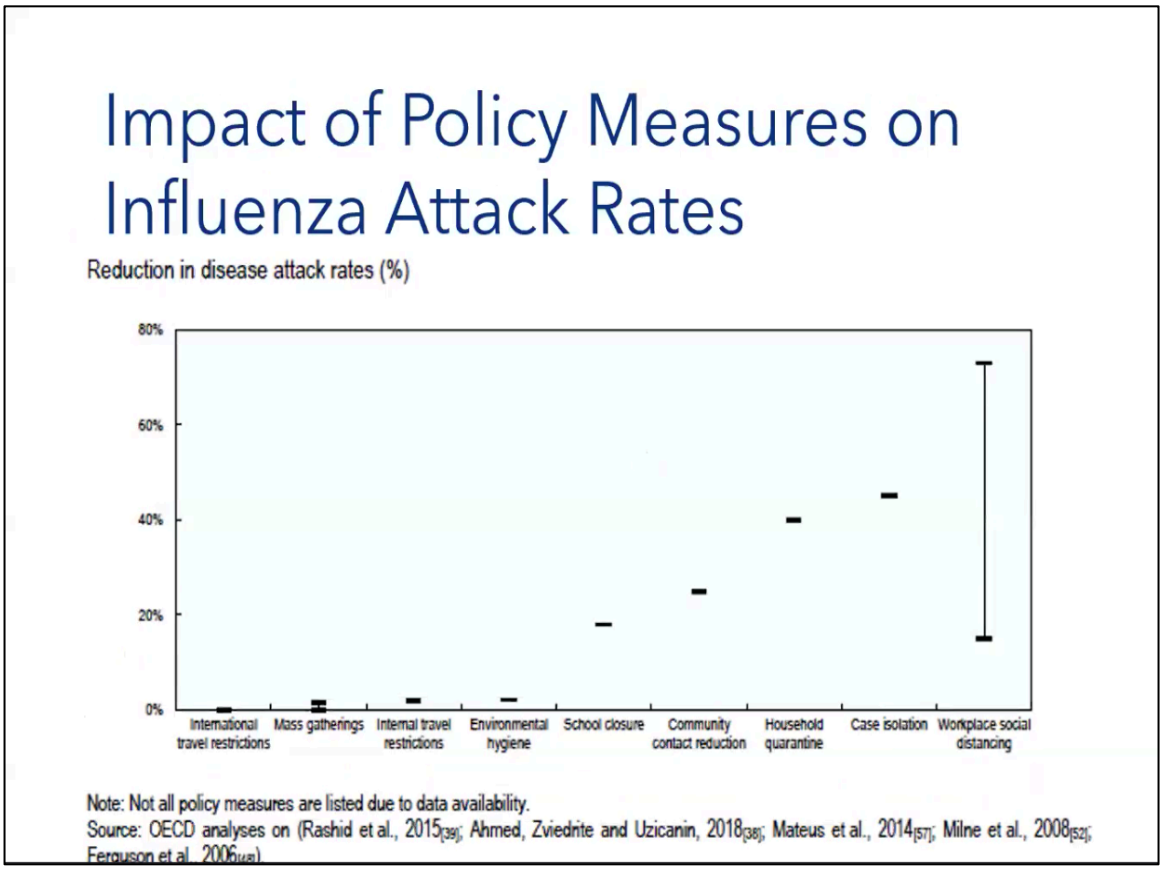
And this has to do with masks. There was a study where during the flu season they had everybody wearing masks in some of the dormitories of the University of Michigan and wash their hands extra. And those dormitories showed up to a 75% reduction in influenza compared to the dormitories where they were not doing those extra things. It was though that some of that was from masks.



Impact of personal hygiene measures on respiratory viruses

Minute 00:09:03

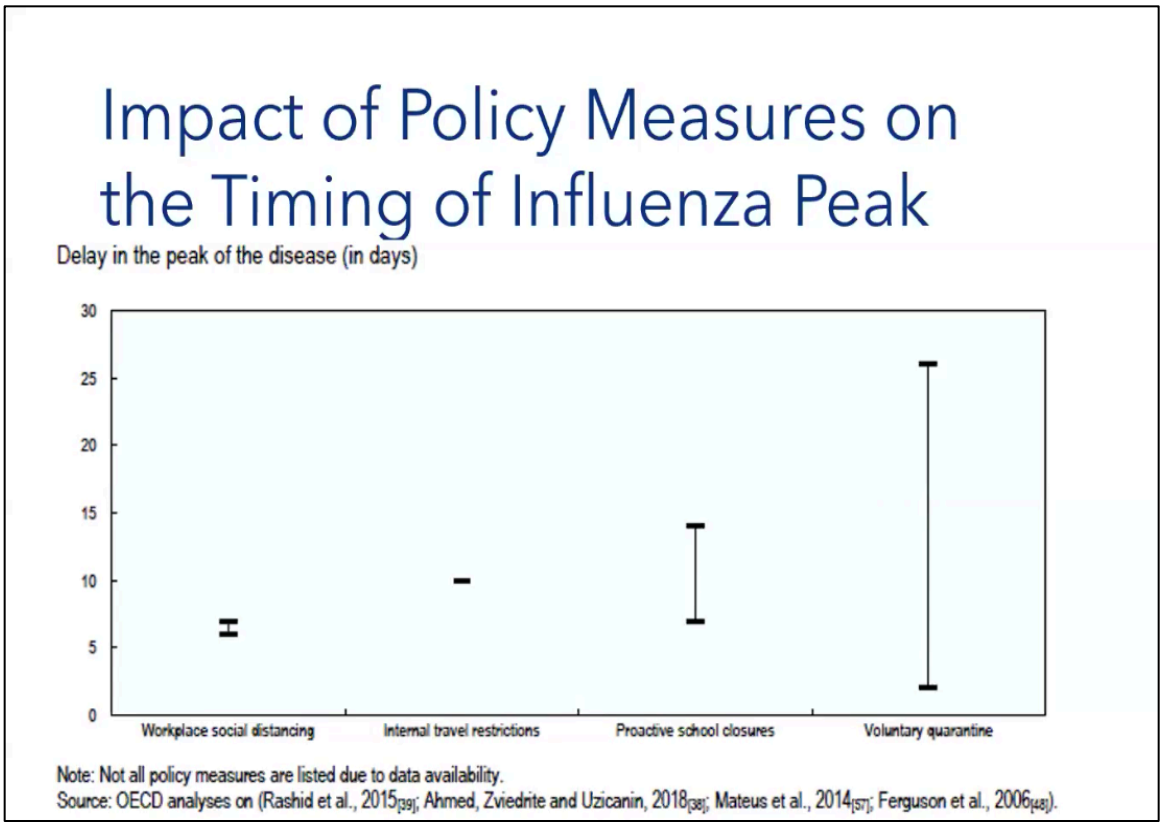
Here is also some evidence from influenza and other respiratory viruses. This is the decline. Each one of this is less than 1, so it shows benefit for the transmission of viruses regarding hand washing, wearing gowns, wearing gloves, disinfecting and wiping down living quarters. These all reduce the spread of respiratory viruses.



Impact of personal hygiene measures on respiratory viruses

Minute 00:09:26

In terms of policies school closure, environmental hygiene, doing some of the public health measures like quarantine, tracing contacts and isolation all reduce the attack rate of influenza. And also, there is evidence, as I said before, that workplace measures, like reducing the number of people going to work particularly, can have a very major impact on the influenza rates.



Impact of policy measures on influenza peak

Minute 00:10:00

This shows the impact on the timing. It shows that measures such as workplace measures, travel restrictions, school closures, and other forms of quarantine all can delay the peak of an influenza outbreak. So, the conclusion from influenza is that there is good evidence that social distancing both can delay an influenza outbreak and can reduce the attack rate and ultimately the peak of influenza.

Evidence from COVID

- Singapore intense surveillance and individual containment has contributed to linear rather than exponential spread (Lee 2020).

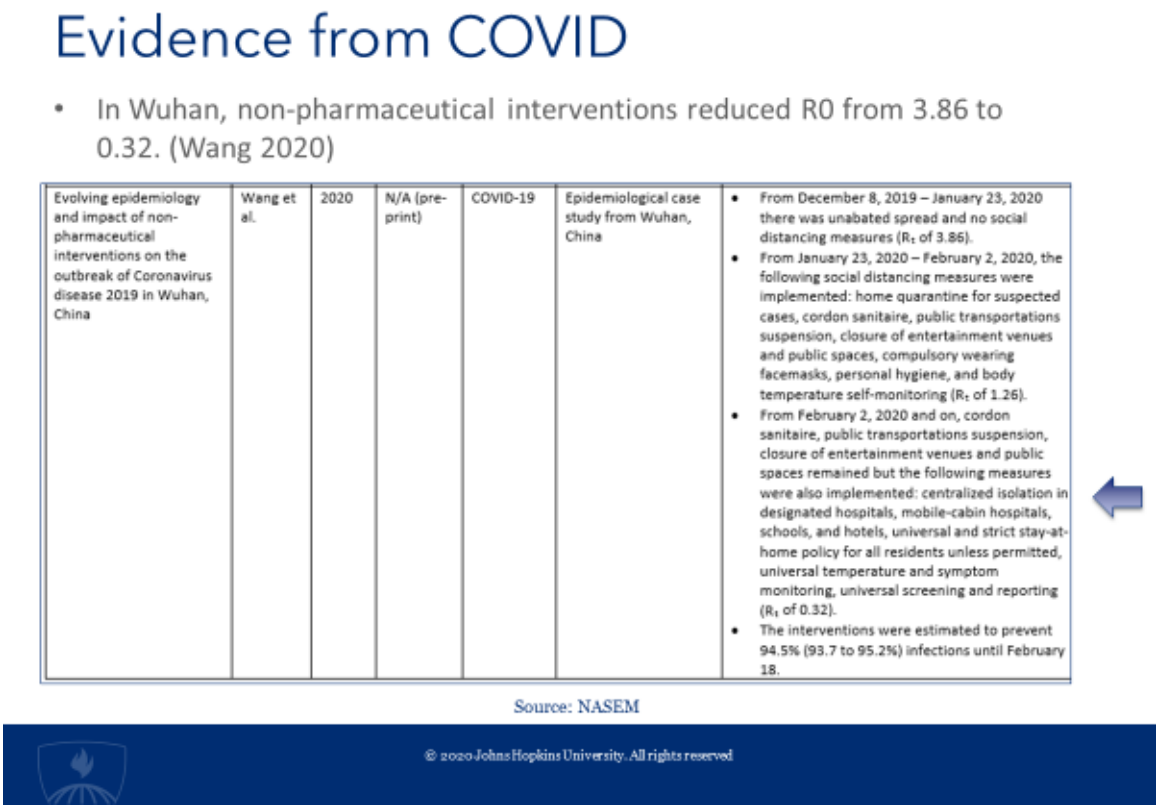
Interrupting transmission of COVID-19: lessons from containment efforts in Singapore	Lee et al.	2020	N/A (pre-print)	COVID-19	Observational review / lessons learned from Singapore	• Despite multiple importations resulting in local chains of transmission, Singapore has been able to control the COVID-19 outbreak without major disruption to daily living. • Strategy of using a comprehensive surveillance system to detect as many cases as possible, and to contain them at the individual level • This strategy, coupled with community-based measures proportionate to the transmission risk, has been effective in containing spread, and could be considered in countries in the early stages of the outbreak where it is not possible to mount massive community-wide containment efforts.

Source: NASEM

Evidence from COVID

Minute 00:10:34

So, what do we know from COVID? We know from Singapore that intense surveillance and containment, including isolation and quarantine, has been the key in that country to reducing the spread from an exponential spread to a linear spread. In addition, there are community-based measures taken. They cancelled large gatherings and they did social distancing in public, so that there are fewer seats in the restaurants, for example. And they reduced work schedules in some ways. But they did not have to close everything down because they had a very strong public health response.



Evidence from COVID

- In Wuhan, non-pharmaceutical interventions reduced R0 from 3.86 to 0.32. (Wang 2020)

Evolving epidemiology and impact of non-pharmaceutical interventions on the outbreak of Coronavirus disease 2019 in Wuhan, China	Wang et al.	2020	N/A (pre-print)	COVID-19	Epidemiological case study from Wuhan, China	• From December 8, 2019 – January 23, 2020 there was unabated spread and no social distancing measures (R_t of 3.86). • From January 23, 2020 – February 2, 2020, the following social distancing measures were implemented: home quarantine for suspected cases, cordon sanitaire, public transportations suspension, closure of entertainment venues and public spaces, compulsory wearing facemasks, personal hygiene, and body temperature self-monitoring (R_t of 1.26). • From February 2, 2020 and on, cordon sanitaire, public transportations suspension, closure of entertainment venues and public spaces remained but the following measures were also implemented: centralized isolation in designated hospitals, mobile-cabin hospitals, schools, and hotels, universal and strict stay-at-home policy for all residents unless permitted, universal temperature and symptom monitoring, universal screening and reporting (R_t of 0.32). • The interventions were estimated to prevent 94.5% (93.7 to 95.2%) infections until February 18.

Source: NASEM

Evidence from COVID

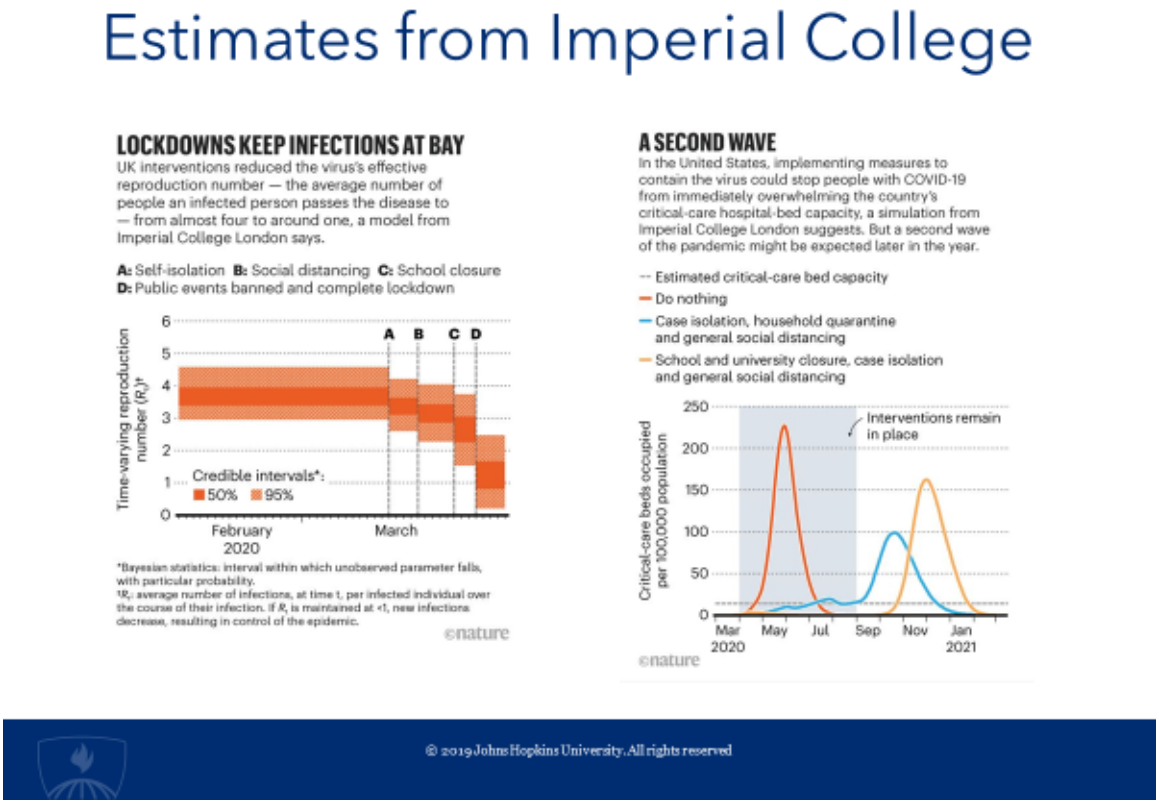
Minute 00:11:18

There is evidence from China that very serious social distancing, including isolating people in designated hospitals, closing all entertainment venues and public spaces, wearing face masks and other personal hygiene measures substantially reduced the rate of transmission such that Wuhan is now in the position to be reopened, starting in the last day or so.

Community Interventions during periods of peak population risk

Minute 00:11:53

Overall, the evidence is generally supportive, although there is not as much evidence from COVID as there is from influenza, that social distancing, particularly in the workplace, schools, travel, restricting large gatherings and wearing masks, under some circumstances, can actually reduce the population risk form the infection.



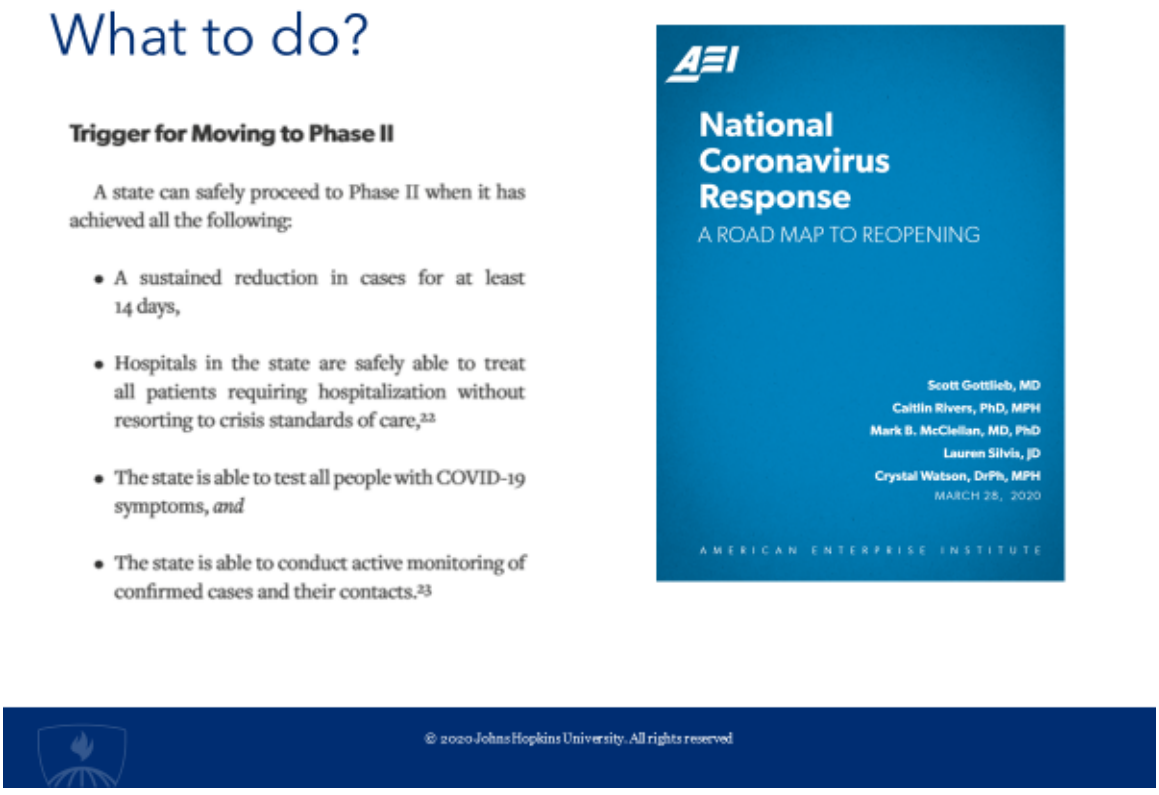
Estimates from Imperial College

Minute 00:12:24

And these are some estimates from models that come out of the Imperial College London, showing that these various steps including school closure or banning public events, can in theory, reduce the reproduction number below 1. The reproduction number is the number of people that somebody with the disease can pass it on to. If the reproduction number is two then it goes from 1 person to two and then to four, to eight people, to 16 and then 32 people and you get exponential growth. But if the reproduction number is less than 1 then the epidemic dies out. And so, what the model suggests might be possible is by putting in place isolation for people who are sick, social distancing, closing schools and banning public events you can actually get the epidemic to slow down and even die off.

So, this graph on the right is another map from this model, which shows that if you do nothing, you get this enormous surge of patients. If you put a lot of interventions in place then you can keep the number of cases far down. And that includes closing schools, case isolation and social distancing. If you put fewer in place it may grow a little bit more here. So, they are

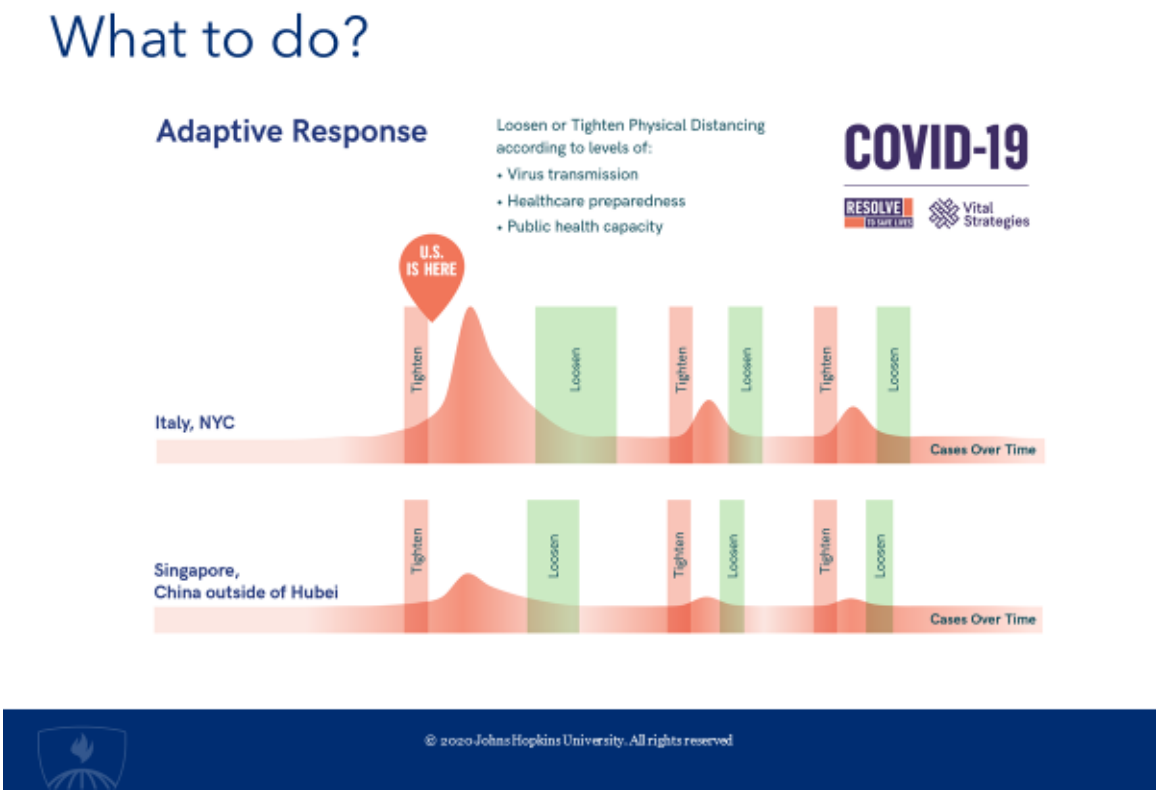
basically different models that suggest how to do it. But I think probably the best picture is one that suggests that what you can do is put in place some of these measures and watch where you are on this curve and as it starts to go up you put in place measures again in order to control it.



What to do?

Minute 00:14:26

After you have put in place many difficult measures how do you know when it is time to start to relax them? So, if we all agree that these measures are helpful, we don't know exactly how helpful but this is what we do to reduce the spread of the virus, then when do you slow down? There have been a number of reports in the United States that say that you may be ready to back off some of these very serious interventions if several conditions are met. And here is one set of them: if you have a reduction in cases for at least 14 days, if your hospitals are able to take care of the patients without having a crisis standards of care, if you can test people so you have a good sense of when the increases are happening, and if you can conduct monitoring of cases. When you can do these things then it is definitely safe to start backing off the restrictions.



What to do?

Minute 00:15:36

Having said that, once you start backing off you have to keep watching because you have to see what happens. And this is a model of adaptive response. Which means, let's say you are headed up on the curve and you put in every bit of social distancing you can and you finally get over the curve, then you can maybe loosen some of your restrictions but you are at risk that if you are loosening them that the number of cases will go up. And if you cannot control these cases through active surveillance, monitoring and quarantine then you may need to go back and impose some of those restrictions again. So, a metaphor that we are using a lot is that in the United States, for example, we have to turn off our economy like a light switch, very quickly, to get everybody to stay at home as much as possible. And many countries have done that. Turning it back on though is not as simple as switching on the light switch. It is more like a dimmer. It is one of these lights that go very slowly from dark to light. So, we have to slowly increase the ability of people to go back to work but we have to prepare it to make it darker again if there is an increase in the number of cases that threatens the integrity of the health care system.

1918 Influenza Pandemic had multiple waves as interventions were lifted

Minute 00:16:57

And in fact, this model was what people saw in influenza over a hundred years ago that you had a big peak initially and then smaller peaks. And different measures had to be put in place when these small peaks happened. So, this is from 1918.

So that concludes my section on the evidence and the thinking behind social distancing, on how to impose it and how to think about lightening the social distancing. And I am now turning for a few comments to Dr. David Peters, the chair of International Health at the Johns Hopkins Bloomberg School of Public Health to talk about the challenges in low- and middle-income countries.

Common Challenges in Low- and Middle-Income Countries

- **Weak surveillance and response systems.** Countries may have difficulty in early detection and response to new cases, or setting up Incident Management Systems
- **Significant at-risk population.** Many people working in informal sector, depend on daily earnings. Remote populations with poor access to services are vulnerable
- **Multi-generational housing in crowded conditions.** Increase transmission and severity of infection among those most at risk
- **Limited health care capacity.** Healthcare worker shortages are common, and insufficient protective equipment puts them at risk. Wuhan required 2.6 ICU beds per 10,000 adults. Some developing countries have 1 ICU bed per 1,000,000 adults.
- **Other health conditions**. Consequence of overwhelmed health system is loss of services for pre-existing diseases and other preventable conditions, difficulty in managing pregnancy and childbirth
- **Low trust in public institutions.** Willingness to comply with government orders or use public services

COMMON CHALLENGES IN LOW- AND MIDDEL-INCOME COUNTRIES

SPEAKER: Dr. David Peters

Minute 00:17:38

It is a real pleasure to be able to speak with you today about these issues. On the other hand, it is a little awkward to be talking about challenges and recommendations for low- and middle-income countries because on one hand if anything this epidemic shows that this is a global and highly connected world and there is differences at national levels but also at local and at household individual levels that matter. And in some ways of looking at it whether you are a low- and middle-income country or not is only a small part of that component because every country is struggling with this. And it might be issues around leadership or around capacity, which are about systems, people and other resources, as well as about social buy inn, whether it is trust or obedience, depending on the system. So, these types of parameters may actually be more important, particularly when it comes to issues around social distancing and how well

they are going to be implemented.
But this slide, in any case, shows some of the issues that I think are very common in resource constraint countries. I would say issues like leadership are an issue in every country as well as systems. But most countries, and particularly low- and middle-income countries, have weak surveillance and response systems. And so, if you are actually just setting them up now during the crisis, it is going to be very difficult to be able to respond quickly, to be able to detect cases and to have a containment strategy. And if you are setting up Incident Management Systems during the epidemic for the first time, it is particularly difficult to do that. It is like building the boat while it is sailing, yet the deck is on fire.

Another common issue in low- and middle-income countries, in particular, is that there are large populations at risk. In particular if you have large numbers of people working in the informal sector, and especially if they are poor and working in the informal sector so that they depend on a daily wage in order to be able to feed their family, for example. It is very difficult obviously to do things related to staying at home and social distancing when the choice is between being locked down and feeding yourself.

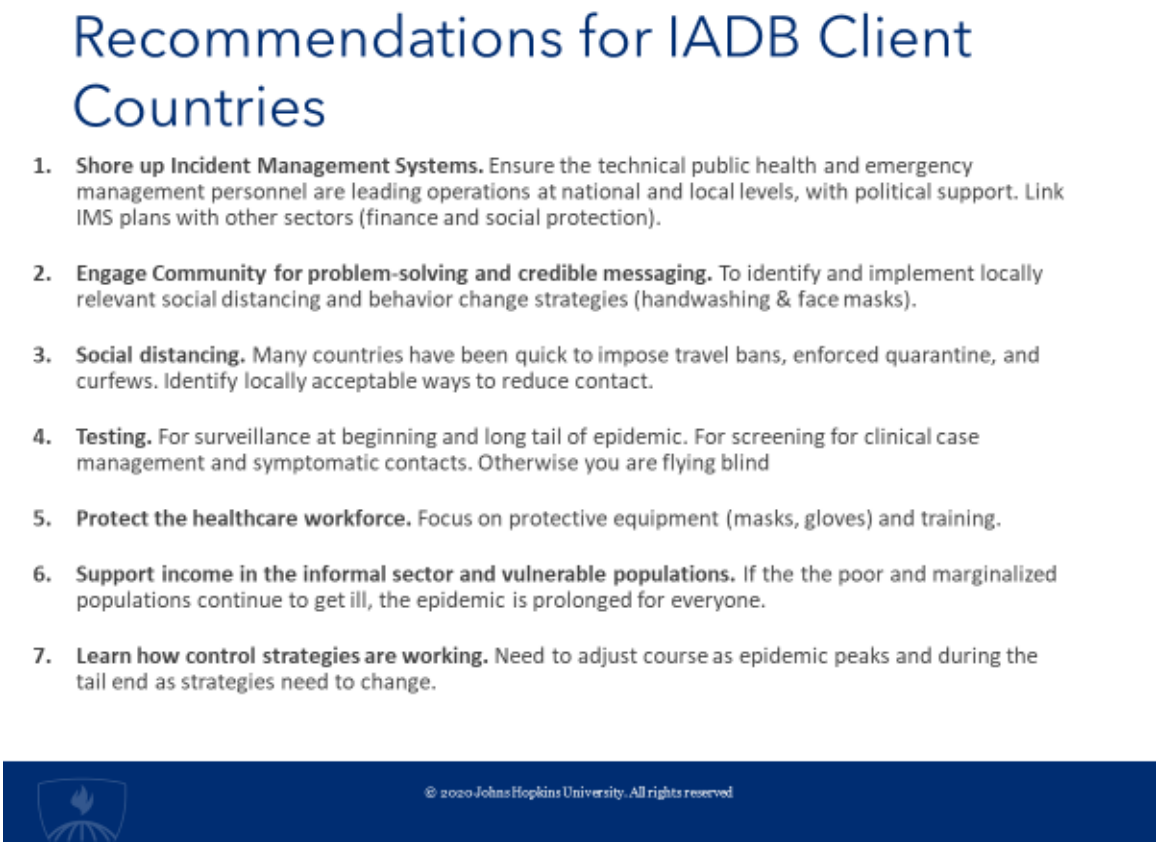
Some countries also have issues related to remote populations. If you have poor access to services and the epidemic hits those kinds of remote communities it is particularly devastating, just because of the poor access to care and then you get these clusters that are particularly vulnerable.

Often the issue of multi-generational housing in crowded conditions is particularly critical in this epidemic where there is much greater severity among the elderly and those with comorbid conditions. And you find that much more commonly in poor countries. The capacity issue is a problem everywhere but health worker shortages are more common and more severe in many low- and middle-income countries. It is not just about having enough people to be able to do the work but it is also about being able to protect them with protective equipment. Otherwise they are also put at risk. Another factor is if you are fortunate to have sufficient ICU beds because obviously there is a big difference from country to country. So here you see that Wuhan in China had about 2.6 ICU beds per 10,000 adults but often it may be 1 or 2 orders of magnitude less than that in terms of ICU bed access.

The other issue is that some health systems, particularly in low resource settings, have less ability to continue on with providing services for routine things, whether managing existing chronic conditions, doing preventive care, or managing pregnancy and child birth. There tends to be a bigger problem with people who have illnesses that systems are no longer able to

manage well. And that is of significance. I can say, for example, during the Ebola crisis in West Africa and in the DR of Congo, there was certainly a lot of attention to dramatic deaths to Ebola but in fact, over time, there were greater losses to conditions like not being able to have measles vaccines and to be able to take care of other health conditions.

And there is another issue regarding low trust in public institutions. Again, that happens in many countries but where you have either fragile states or sometimes authoritarian regimes where people do not obey or in societies where it is hard to get trust you are going to have issues with buy-inn for many of these voluntary or semi-voluntary types of actions that are needed around social distancing.



Recommendations for IADB Client Countries

Minute 00:23:18

I have some recommendations and it is a little bit presumptuous to say that they are for IDB client countries because again every country deserves their own strategy but there are some commonalities of things that are important. One of them is about the importance of shoring up the epidemiologic and the clinical side of the health system. Important is the Incident Management System where you are looking at the public health and the interface of the emergency management and the clinical operations in your country. It is absolutely important to have political leadership and support to be able to do this. There are some countries, including the one that I live in, where you can see the problems of overreliance or problems of the political leadership being in front of the technical side. But that is, again, individual countries which have these types of issues.

There is also the issue of the primary focus, particularly for us in public health but also overall, which is to address the human suffering and tragedy from the virus itself. But certainly, as you move up to the peak and beyond, there are issues of balance and the other financial and social

protection issues. So, it is absolutely critical that there are connections at least at the highest level and certainly at the lower level, the community level, to be able to address both – the public health epidemiological and clinical, as well as the livelihoods regarding financial and social protection side of things.

The next one is really about engaging community for problem solving and credible messaging. It is an often forgotten but important part of any kind of outbreaks that you really need to start with communities. It is important that they are part of it, not just given messages and buying-in, but it is really important for them to be able to really lead in creative ways to design locally relevant measures and locally adhere to social distancing approaches as well as other behavior change strategies.

Regarding the social distancing itself, well there is a lot of politicians that put-on travel bans and forced quarantine measures, as you saw from Joshua's slides earlier. The travel bans probably do the least in terms of reducing the caseload and if you are lucky it may slow down the peak a couple of days. But it is really these local ways of reducing contacts, from the social distancing to the hand washing and being able to do those kinds of things.

Testing is absolutely critical. Right now, nobody has enough tests for diagnosis. At the beginning and at the end of the epidemic it is critical to be able to do the testing for actual surveillance purposes to see where things are actually popping up. But in the middle parts, once you are in that rising peak you still need testing but really for clinical case management and symptomatic contacts for mitigation. Because if you don't have that you really don't know where you are in the epidemic. And I fear that many, particular low income countries – and I would say that the majority of this is probably going to show in Africa in particular, but in other places where there are a lot of low-income countries – we are really going to see a tragedy because around this side because we are not going to be able to test and have the surveillance and mitigation strategies.

The fifth one is protecting the health workforce. Again, this is true no matter where you are. But if you can focus on protective equipment like masks, gloves and training that would be the first line. If you are able to have negative pressure rooms and proper isolation procedures in hospitals that is also critical. But you have to deal with local relevance in the terms of equipment and supplies that you have.

The sixth point is really again that linkage between the public health, the clinical and the financial aspects. You really need to be able to support those in the informal sector and those

who are most vulnerable because you all have a stake in them being able to be safe and, separated or not, being able to propagate the epidemic to be able to be healthy. If ever there was a case for solidarity it is the case, in terms of social and cross-economic solidarity, it is in these epidemic crises, because otherwise the epidemic is going on for everyone. So, you need to have whether it is food support or income support for the most marginalized or even housing in many cases. That is critical to be high up on your incident management set of operational priorities.

And then the last point is really about the importance of learning as you are going along. Yes we have some evidence from the influenza epidemic and we are learning very crudely about how things are working, particularly around social distancing, but really every country needs to learn for themselves how things are going along because you are going to need to adjust the courses as you move along, not just during the peak. Deciding early and acting on decisively early matters, but during the tale of the epidemic – and the tail may be longer if you are able to succeed early on – you need to be able to change those strategies and to know when and how to lift them. For instance, in this epidemic the issue of severity is less among school aged children so there may be more of a reason, for example, to lift bans of schools early on, although in many cases you might be able to work through the summer, it depends on your season and when your school is off. But you need knowledge for country specific types of decisions around your control strategies. And yes, absolutely learn from others, but learning from yourself as you go on is particularly critical.

So that is all I wanted to say at this point.

Questions and answers (moderated by Will Savedoff)

Minute 00:30:45

Questions related to closing schools

We have some evidence of how closing schools effected the transmission of influenza. But we know that this virus is affecting the elderly more than the young. And so, one of the questions that comes up is: Could we gain a lot by opening up schools, in terms of reducing disruptions without losing much of the gain in terms of reducing the frequency of contact? Someone mentioned that Denmark has decided to open schools next week even

Answer Joshua Sharfstein

Like I said, most of the evidence on school closure is in fact from influenza and it has been discussed how much that applies to the Corona virus. I think at the point that societies are facing, that initial surge in cases, when everybody is susceptible, school closure is not just about the kids. It is about everything that has to do with the school. It is about the teacher, the people who clean the schools. It is about all activity that comes with a school. So, when you are facing such a potential for so many sick cases that overwhelms the health care system and you are trying to shut down the potential for the virus to spread anywhere, then closing schools is part of that. It is part of everything that is keeping the virus from moving from person to person. You will see that there are some countries that felt they did not have to close schools because they were able to control things another way. Things didn't get so bad that they had to shut everything down. Singapore initially did not close schools and they were able to control the virus through isolation and contact tracing. However, recently, when it has gotten out further and there has been more community transmission, in order to get better control of the virus they went ahead and closed schools for a period of time. So, closing schools is a tool, which can be used when it appears that things may be getting bad. That is part of the tool kit to control the spread of the virus. It does not mean that schools have to be closed forever. Like I showed in the slide about the adaptive response, once you have control over the virus, once your health care system is more stable and you have a strong public health capacity to respond to individual cases, then places can consider opening schools again. But if you do that you should be testing and you should be watching. It may be that older teachers should not come back for a while. So, each country is going to have to make a decision about how to think about reopening schools. Nobody knows exactly the right answer so whatever you decide you have to be watching the epidemic very carefully.

Answer David Peters

I would agree with what you were saying. What I would add is that I think it is important to follow up on some of the knockdown effects when you do close schools. And in particular, if you have school aged children and you have health care workers, for example, or those who have to go to work, you have to find other means to be able to take care of the kids and setting that up is an important part of a response. As Josh was saying it is not just the kids at school, it is all the parents and the workers and people connected to that. The other aspect of this is really about what happens if you have a lot of people together in the same place in crowded conditions. And that is not just a question of school closure. If you are not working and everybody is at home it is that issue of how do your de-crowd. If you are in a slum, for example, you get multi-generational households so it is also a question of having many more people together.

We do know that kids tend to have more contacts. They are much more active in physically getting close to each other than elderly people. Everyone who has kids knows that intuitively anyway. So, they do play important roles even if in this epidemic they are not the ones who are most likely to have severe disease.

Questions related to the term 'herd immunity'

May this just die down on its own? Can you talk about that if herd immunity? Is that a strategy? Or is it something that low- and middle-income countries should be thinking about differently because they have so few resources to handle things in other ways?

Answer Joshua Sharfstein

I would say that if you don't do anything in any society to address the social distancing, then what happens is that the virus will spread through the population and so many people will get sick and it will only slow down when there are no other people for the virus to find, either because people have died or because they are now immune because they have recovered. So, when people talk about a "herd immunity strategy" sometimes they say: "well, we should just get everybody sick and then we can slow down the infection." But that is a recipe for many more people sick than any health care system in any part of the world can handle. So even in very advanced health care systems you can't do a strategy like that because it would be too many people and you have the potential for a collapse of the health care system. So, the challenge with that as a strategy is that it is not really a strategy. It is basically accepting that you are going to have a very serious collapse of the health care system. The alternative approach is to try to get control first and slowly people are getting infected but you are maintaining your control through public health measures and you are basically waiting, hopefully for a vaccine, or for eventually enough people to be infected that you get herd immunity. But you are waiting at a point where the health care system can bare it. I think it is a very difficult strategy for any country to pursue but let's see if Dr. Peters agrees with

me.

Answer David Peters

Absolutely. Herd immunity is not a strategy. It is only a strategy if you have a vaccine. Otherwise it is just waiting for everyone to get infected. In this case it is everybody getting infected and then some people are dying. It is not a strategy and certainly not prevention strategy. It becomes a strategy if you can get a vaccine and achieve herd immunity through vaccination.

Questions related to communication

What do you think are the kinds of messages that governments should be giving at the moment? What are the possibilities of using behavioral approaches that have been explored in recent years, to try to try to encourage more compliance with the social distancing strategies?

Answer Joshua Sharfstein

Communication in a crisis like this is more than just telling people about what the government is doing. It is actually part of the response. Because communication and engagement that is credible and reaches people, helps people to know what to do to protect themselves. And in this case, all those things that people are doing those add up to less viral transmission. So, having an effective communication strategy is very important. Elements of that strategy include: regular communication, honesty, transparency about what is going on, credibility in the sense of standing not just with the political figure but also health experts, health care experts and others, telling people what they can do, promoting action, expressing empathy because this is very difficult for everybody and respecting different populations that may exist by reaching out in appropriate ways through the faith community and the media to every community you can get to. So, doing that with clear messaging is one of the most important things that governments can be doing now. I will turn to David for the question related to behavioral strategies that may be helpful in terms of messaging. But for some of these things it is probably a combination of appropriate legal restrictions that are imposed fairly and transparently as well as persuasion.

Answer David Peters

Just to reinforce, communication is a critical part of the response itself. And all of the things that Dr. Sharfstein mentioned are absolutely critical. Regarding the behavioral approaches, absolutely, take advantage of what we have learned about how we can change behaviors. And if you want to give a message of what you can do those are the things where these communication strategies are important. And it is both things like what you can do individually, for example washing your

hands or covering your face and many people are using masks. It is about keeping distance and isolating when you are sick and it is also about the means you have when and how you go to the hospital when you are sick. Those are things you can do and often you need credible spokes people who are at the local levels as well as at the most senior levels. When you want to make changes to get responses, for example people getting together whether for religious reasons, celebrations or funerals or other types of social connections, you really need a credible spokesman. And they are usually not going to be from the government. So, you do need faith leaders, people that you can trust to give those kinds of messages. So, the messenger and the message are critical.

Questions related to indigenous peoples and more dispersed populations

Do you have any particular thoughts about what is different for those areas than for the dense urban ones?

Answer David Peters

I am Canadian. So, a lot of our population returned to the province of first nations and indigenous peoples are often living in very isolated areas. This is one of the situations where it makes much more sense to be able to have targeted types of travel restrictions, mostly to protect the communities from people that are coming in. You also need to have much greater connections, often by distance, to be able to do the kind of screening and triage for these populations that are in remote areas. The other aspect then links back again to communication. You need to listen and understand what are locally relevant ways of being able to self-isolate, making sure, in many cases, that you have the supplies to protect the health care workers that are there. But you need particular attention because they are vulnerable. And again, in many of the situations that I am familiar with, indigenous populations some have high levels of comorbidities and so they may well be particularly vulnerable to severe disease. They are often living in crowded conditions, and again, multigenerational homes are very common in many communities. So again, because of their particular risks you need to find better ways of distance connection and also referral but also, yet again, very targeted reasons to keep people from travelling there. Because you are seeing a lot of people from the cities, for example, try to go to remote areas to travel in order to safe them and to explain to practice social distancing. But in many cases, this is not a very good idea to be bringing people into remote areas. Now how you do that in different countries is very different. It needs to be done respectfully with leadership from tribal counselors or indigenous people's leadership to see how you design and implement that. It should be led by indigenous peoples.

Questions related to geographical targeting

What are the possible impacts, for any country but particularly in this low- and middle-income context, on people's abilities to earn livings and work? All these other things are so important. What are the prospects for geographically targeting these social controls? I mean China did not lock down the entire country. They looked down Wuhan. Understandably Wuhan is millions of people but in smaller and in lower-income countries, is geographical targeting of these social interventions possible and what would be the conditions to do that?

Answer Joshua Sharfstein

I will say that I think yes. I think that the virus does not really respect any boarder. So, the national boarder is just as arbitrary as any boarder you would draw within the country. And there may be some more natural boarders to draw based on the geography and the types of communities that are in different places. But having said that, I think we are seeing in the United States, where we have many different geographies, that right now during this initial first rush, it has been very important to slow things down across the board so that we can get a better handle on the risks that different places are facing. But as we do that, you think of each area a little bit on its own, each area that makes sense to a country. And you think about whether or not it has the capacities that I have talked about before, to be able to withstand an outbreak and the ability to monitor what is happening and take response. So, you have to think there is areas that may have fewer people and may have much less of a health care system. So, you have to be able to be prepared to mobilize quickly and shut things down very quickly in an area if the infection really starts to pass around. I would be thinking about the surveillance that you have in different areas and if there is any capacity for public health response in areas that are maybe more isolated so if you had to you could shut them down again. And once you do that to take different areas separately, I think is perfectly appropriate.

Questions related to testing

You mentioned surveillance is critical to that kind of strategy. How many people do you need to test? We know that South Korea is testing a huge number of people. It seems like there are a whole series of questions regarding three issues. First, there are questions about the reliability of the tests. Second, how many tests you need to do? And third, in low-income contexts, what are the priorities and how would you use the tests first?

Answer Joshua Sharfstein

Sure. Maybe I will take a shot at that in reverse order. I think the priorities include the health care system, to make sure that you are able to take precautions for patients who have Corona virus

and that you protect health care workers. So that is important. If health care workers are getting sick you need to know whether they have this so you can step back and not be passing the virus on to other people. A second priority is going to be locations that you identify, where there are many people at risk for serious illness. In the United States, for example, we have long-term care facilities where people who are all older live together. Those places are very much at a risk for an outbreak. Maybe other places with congregate living, jails, for example, apartment buildings with a lot of older adults, where there is a risk that if one person gets sick and you don't figure that out quick enough, you can pass that around and many people can get sick and even die. So, you want to have testing available to be able to respond quickly to that situation with your public health resources and get the sick people away if possible so that others don't fall ill.

And then a third priority would be a more general testing people with symptoms to be able to get a better sense of the spread of disease in different parts of the country and to be able to refer people for isolation and quarantine. Those would be my three priorities I would suggest.

How many tests should be done depends on how much virus is there, how many cases there are. But having a capacity to test, as part of an overall strategy of infection control, is going to be very important while we don't have a treatment or a vaccine. But you shouldn't think of testing by itself. It is testing and the capacity of responding to tests. So, at each level, if you find that there is a positive case at a jail you would have to have the capacity to respond. In every place you want to have the capacity to respond to a test that is positive.

Answer David Peters

I would agree totally with that. The one thing I would add is that there is some difference in priorities at different points in the epidemic and that at the very beginning and then towards the tail, when you are worried about that coming back and forth, it is particularly important to be testing, either on a regular basis or on symptomatic in the population and then linking it with isolation, contact tracing or referral. But again, most people are beyond that in the beginning of the epidemic but that will be coming back during those phases where we saw those waves of it returning and how you are able to contain it at that point.

Answer Joshua Sharfstein

I agree. At a period where there are many positives and pretty much everyone who is sick has Corona virus, the testing may not be that helpful but it will eventually become helpful as you are trying to reduce infections aggressively.

Questions related to the value of masks

One of the slides you showed seemed to, at least for influenza, demonstrate some significant impact and it seems to be a pretty cheap way, in terms of collaboration of things that people can do rather than just keeping away from each other. What is your sense on masks and the role they could play?

Answer Joshua Sharfstein

I did see the WHO guidance. The WHO and the CDC are not exactly in the same place on masks. I think that everybody agrees that people who are sick should be wearing masks because that reduces the spread of the virus to others. It does not eliminate it. So, it is still important to do social distancing and everything else. But people who are sick should be wearing masks. Everybody else agrees that the medical grade masks should be for health care workers and others who are dealing directly with individuals who are sick, if there is particularly not enough around the priority should be for health care workers. So, everybody agrees on these two points.

The point where there is less agreement is what about everybody else? What about people who are healthy? And the argument for wearing masks is that there is known to be an asymptomatic transmission and so that people could be harboring the virus, and if they are wearing a mask, they are less likely to pass it on if the mask is catching at least some of the virus. So that is the main argument for wearing a mask. The WHO says that the benefit has not been proven of that. There is evidence from influenza that might be helpful. The CDC is encouraging people to wear masks on the basis that they think it will reduce the spread from person to person. On the other hand, if people are not washing the mask and they are constantly adjusting the mask, they may be more likely to touch their face and actually get infected with the Corona virus. So, I think that right now we are seeing a period where there is not uncontested data and countries have to make decisions. I think a lot of people in the United States right now are in the camp of encouraging mask use for everyone when they are in contact with other people, like if they are going out shopping. But not requiring it like they might be requiring, for examples, schools to be closed. So, it is a strong recommendation in many places right now in the United States. But this is sort of a judgment that countries have to make based on the pros and the cons. But right now, in the United States the argument is that it can slow asymptomatic spread of the virus.

Answer David Peters

But this is also the reason why we need to keep learning from the epidemic and see if we can unbundle the different kinds of interventions that are being made. Decision makers are often

putting together packages of these kinds of decisions. And I hope that over the course of the epidemic we will be able to learn more about the role of masks, in particular, and the other types of social distancing measures in different contexts.

Questions related to time period of restrictions

How long does this phase go on? A lot of countries in Latin America have put serious social distancing mandates and controls in place. In Paraguay, for example, it seems they are already on day 29 of restrictions. Is there any expectation? Are we talking about weeks or months? And what is going to shorten that time period?

Answer Joshua Sharfstein

I think that the goal is to use the time. So, if all you are doing, while the social distancing is in place, is just slowing the number of infections then as soon as you relax the social distancing the number of infections is going to go up. Because there is a small percentage of people in the country who have been exposed. And the only reason you are keeping the virus from spreading is by keeping people in their houses. If you let them out, then you will get much more viral spread. What you have to do is think: "What can we put into place in that period of time when things are slow and we are trying to control the virus right now?" There are many things that can be done. Your confidence in those things allows you to start to turn that light back on very slowly. And that includes protecting the health care workers and getting more protective equipment for the health care workers. It includes expanding testing and your public health capacity to track infections. Those are all elements. Another one is setting up places where people who are sick can go so, they are not going to keep spreading it in the community. I think that it is reasonable to hope that as infections come down, and if you can take those steps, that are basically steps other than keeping people in their homes, they are alternatives to that, and then you have the ability to slowly turn things on. But you don't want to put the light switch back on and have everyone go out and get sick. You have to go slowly and you have to think about what are those different points. It may be that you are opening schools but not for the teachers who are at highest risk. It may be that you are going to open restaurants at some point but not at the normal capacity. Like the concerts and the big venues, those are probably the last things that you open. It is important not to think about this as a one point in time of when are we going to get back to the way life was before, but rather what is the process we put into place and the capacity that we need to build so that we can slowly turn the lights on again.

Answer David Peters

I would agree with that. I mean we have seen how quickly you can turn the epidemic around in

places like China, New Zeeland, Singapore and Taiwan. But I think we are also going to be learning – as Josh said – in terms of the gradation of things that have to be put in place over time and yet to see about the follow up waves and how they occur. We have seen some examples of how long it takes to get out of the peak and the crisis stage but we are learning about keeping it down and the future waves.

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