COVID-19 Combination Prevention

Since the beginning of 2020, the COVID-19 pandemic has been affecting, to different degrees, all of the countries in the world. With different levels of lethality and in some cases, with two sequential outbreaks separated by season we few months of little community viral circulation, it is clear that the prevention of COVID-19 exposure is the only measure we have today to maintain the majority of the population's protection.

A group of prototype preventive vaccines that are in phase three shows a good prognosis and their access would profoundly change the dynamics and response to the pandemic. However, large-scale access can present long delays between the approval of a safe and effective vaccine by health regulatory authorities and agencies, and the vaccines reaching people. There are some models with estimates of delays of more than one year between approval and use in lower income countries and populations with fewer resources.

a. The COVID-19 vaccine is not an immediate solution

Companies will face great challenges to produce and distribute a significant number of doses to vaccinate people (the candidates under study require two doses, which seems the most likely approach), as well as logistical challenges for their distribution. It is clear that health professionals, who are at the forefront of the response to COVID-19 in health centers, are the priority population to be immunized, followed by the most vulnerable populations such as the elderly and people with pre-existing health conditions, for whom an acute infection presents a higher risk of morbidity and mortality.

At the moment, we are not clear on three key aspects: 1) The degree of immunity needed for the vaccines to have an impact on personal and public health, reducing community transmission; 2) duration antibodies provided by the vaccine to prevent the spread and infection by COVID-19 and if annual vaccinations will be required, and 3) acceptability of the vaccine and how/if this will have effects.

In a country hard-hit by the pandemic like the United States, with more than two hundred thousand deaths from complications related to COVID-19, The Lancet[1] just published the result of a study that indicates that "fewer than 10% of the US adult population formed antibodies against SARS-CoV-2, and fewer than 10% of those with antibodies were diagnosed." On the other hand, it is unknown how long these antibodies will last. This demonstrates the low efficiency and high cost (in lives) in trying to achieve herd immunity. The duration of antibodies in those who tested positive for COVID is also unknown.

Currently, the prevention measures for the transmission of COVID-19 are the most efficient and accessible way to protect the population and have an impact on curbing the circulation of the coronavirus through the community. Even when the main means of protection and prevention are relatively accessible, there is a significant number of the world's population without access to basic resources, such as soap and water. What is also an inescapable fact is the poor and almost non-existent communication work to reinforce preventive behaviors in the communities, even the lack of clarity that exists about the phases and what can or cannot be done at each moment and in each place.

b. COVID-19 Combination Prevention

The term "combination prevention"[2] was coined by the response to the Human Immunodeficiency Virus (see here), which for the first-time compiles in a 'box' the preventive tools that are presented in three groups: behavioral, biomedical, and reduction of structural barriers. These, applied in comprehensive packages, have the potential to significantly reduce the transmission and hence the number of new HIV infections, to control the epidemic in the absence of a vaccine to prevent HIV or a cure.

[1] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32009-2/fulltext
[2] https://iris.paho.org/bitstream/handle/10665.2/34381/9789275119792-eng.pdf?sequence=6&isAllowed=y

With the arrival, a few years ago, of better biomedical measures applied to HIV prevention such as pre-exposure prophylaxis, treatment as prevention, and the evidence that people living with HIV with undetectable viral load do not transmit HIV (U=U), are a turning point in the prevention of the virus. The success of combination prevention lies in the use of most of the tools simultaneously from the three groups of approaches. Most, and ideally all, should be used.

In this context, key populations most exposed to HIV face high levels of stigma, discrimination, and criminalization as structural barriers, making it unlikely that they will be able to access biomedical tools promptly or sustain lower-risk behaviors. The sum of the parts is essential to achieving the synergy necessary for an effective combination of HIV prevention.

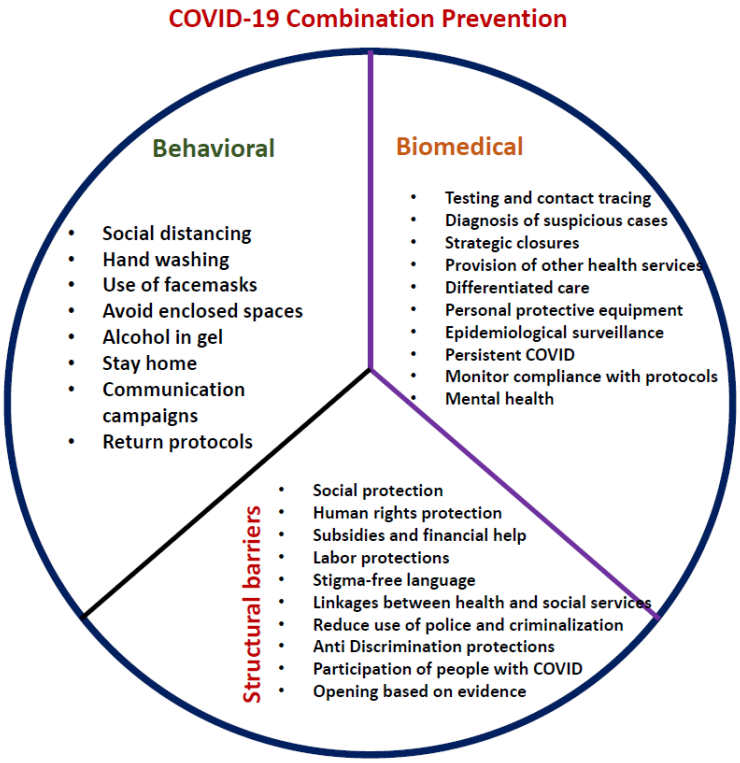
The same logic applied in HIV prevention can be adapted to the prevention and protection of people against COVID-19: promoting a comprehensive and combined model has the value of promoting the visibility and use of all accessible tools until a significant number of people have access to a highly effective vaccine or some other natural change in the trajectory of the pandemic. Vaccines for COVID-19 is one tool in this box of multiple combination prevention approaches for coronavirus. We must assume, not only the delay in the access of the majority of the population to vaccines but the fact that these are not the only answer to control the pandemic.

c. The model of combination prevention: List of Interventions

Behavioral Interventions	Biomedical Interventions	Reduction of structural barriers Interventions
Hand washing with soap and water	**Testing and contact tracing**	**Social protection** measures for vulnerable populations in economic, food and housing emergencies
Individual physical and **social distancing** of at least two meters	**Diagnosis** of suspicious cases.	Active **protection of human rights** of the populations in general and in particular of the most vulnerable
Use alcohol in gel and other approved sanitizers	Timely strategic **closures or quarantines** for intermittent lapses and zones	Provision of **subsidies and financial aid** to workers in precarious situations, the self-employed and the unemployed.
Consistent use of **face masks** (covering nose, mouth and chin)	**Access to care** for people with pre-existing health conditions including the multi-monthly provision of treatments for chronic conditions	**Protection of job sources** with the provision of segmented financial assistance including the retention of health insurance.
Staying at home and reducing unnecessary circulation in general and in particular in areas of high community circulation	**Differentiated** care of suspected cases and other patients in health centers.	**Elimination of language that promotes stigma and discrimination for people with COVID-19 and vulnerable groups,** including identity protection and confidentiality.
Communication campaigns aimed at targeted prevention and reporting the status of the epidemic by region (including phases and their characteristics) by population segments	**Ensuring access to personal protective** equipment (PPE) and materials to health care workers linked to the care of people with COVID-19 and suspected cases	**Systematic linkage of people with COVID-19 in the health system to social programs** if they present evidence of high social vulnerability.
Design of protocols based on evidence for **the return of activities,** which are clearly communicated, as well as the reopening of commercial and productive sectors.	**Epidemiological surveillance and proper case reporting.** Use of this information for decision-making and full transparency with citizens. Avoiding the feeling of false security	**Reduce the use of police control, the criminalization of people who have not been** able to observe protection measures and also increase protection measures for those that are institutionalized.
Government officials, political and opinion leaders, and other influential persons, **must lead by example using the facemasks and maintaining social distancing.**	**Increase knowledge about persistent COVID-19 and train health professionals on** timely diagnosis and clinical follow-up. Offer spaces and communities.	**Protect people with COVID-19 from all forms of** discrimination, particularly employment discrimination. And promote

		medical and social accompaniment programs.
Avoid all kinds of indoor activity and situations where people could be in enclosed places and exposed to circulation area of COVID for more than fifteen minutes.	**Monitor compliance with COVID-19 prevention protocols** at all services, including transit and transport. Introduction of timely changes to improve their effectiveness.	**Promote the active and significant participation of civil society, including the community of people with persistent COVID** in the design, implementation and evaluation of all actions and interventions.
Provide drinking water, soap, alcohol in gel and facemasks to people without resources.	Increase **access to mental health** services including prevention of all forms of violence.	**Promote the right to work, recreation and other activities with specific and segmented strategies for orderly** openness based on evidence.
Design and implementation of a strategy for progressive and free access to an effective vaccine for COVID-19		

4. Combination prevention scheme



Access to an effective vaccine for a significant number of people will take many months and will not be equitable, meanwhile, we have a toolbox to protect ourselves from COVID-19. State responsibility is inescapable in leading the response and ensuring access, providing resources for the implementation of most COVID-19 combination prevention approaches.

We call on decision-makers, organizations, social movements and individuals to adopt and promote COVID-19's combination prevention approaches!

We appreciate dissemination of this resource

La versión en español disponible en éste vínculo: http://bit.ly/PrevnComCOVID

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