The public health impact of COVID-19 in Central America and the Caribbean: Cuba

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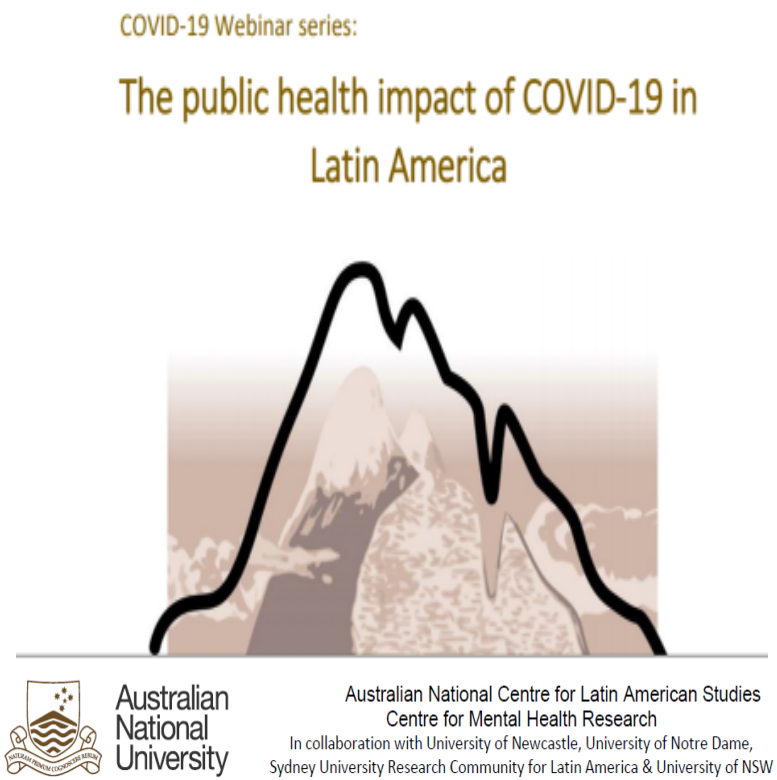


The Cuban strategy

- Incorporated nationwide door-to-door screening for persons presenting with fever and/or respiratory symptoms, carried out by primary care professionals supported by medical sciences students.
- Application (‘app’) for mobile devices (a ‘virtual screener’) was developed for people to self-evaluate and indicate if they present symptoms, which then advises local health authorities so that a primary healthcare service provider can visit them at home.
- Both components of the strategy have provided valuable complementary epidemiological information on presence of possible clinical cases of COVID-19 and have opened up new possibilities for surveillance and control of other diseases in the future.

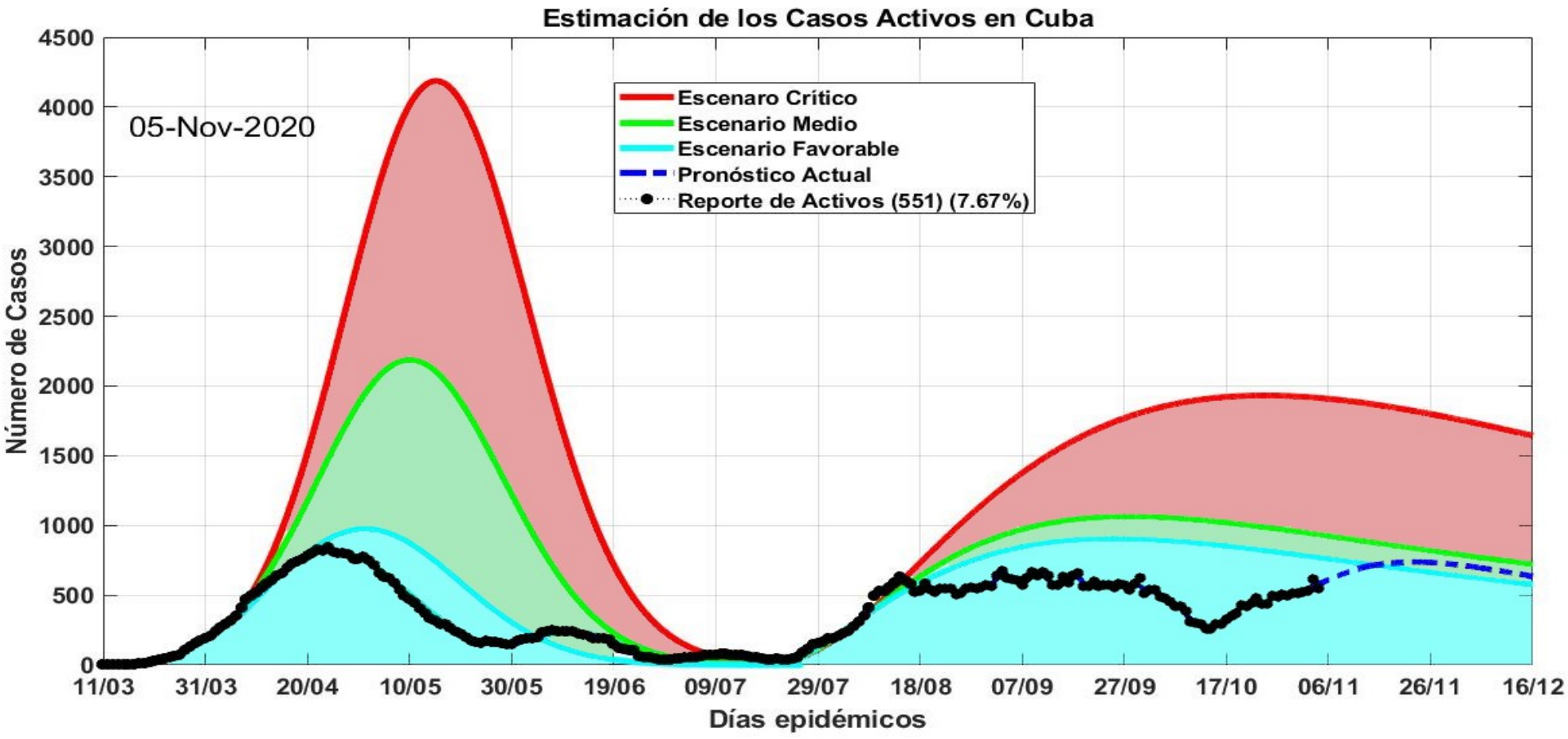
The Cuban strategy II

- To gather specialists in biomedical, hard and social sciences into a Technical Advisory Team within the Ministry of Public Health.
- The team was tasked with periodically analyzing the epidemic situation, identifying problems and recommending solutions for different scenarios.
- Among other things, this facilitated incorporation of new treatments and innovations for improved patient care, as well as timely predictions useful in guiding strategies for controlling the epidemic.
- The contribution of Cuban institutions and scientists has been recognized in the media by government and health authorities.

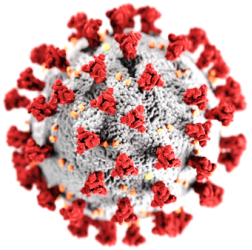
Prognostic models

- Researchers from the University of Havana's Mathematics Faculty applied several prognostic models for the course of the epidemic in Cuba
- The SIR model (Susceptible-Infected-Recovered), based on a system of ordinary differential equations, has been used elsewhere and was chosen due to its simplicity and ease of interpretation.
- Figures shows the expected case curves in three theoretically possible scenarios (favorable, moderate and critical). The active confirmed cases reported each day are registered in black (total cases minus those recovered or deceased).

SIR model (Susceptible-Infected-Recovered)



Coronavirus in Cuba –November 17, 2020/11:59 pn



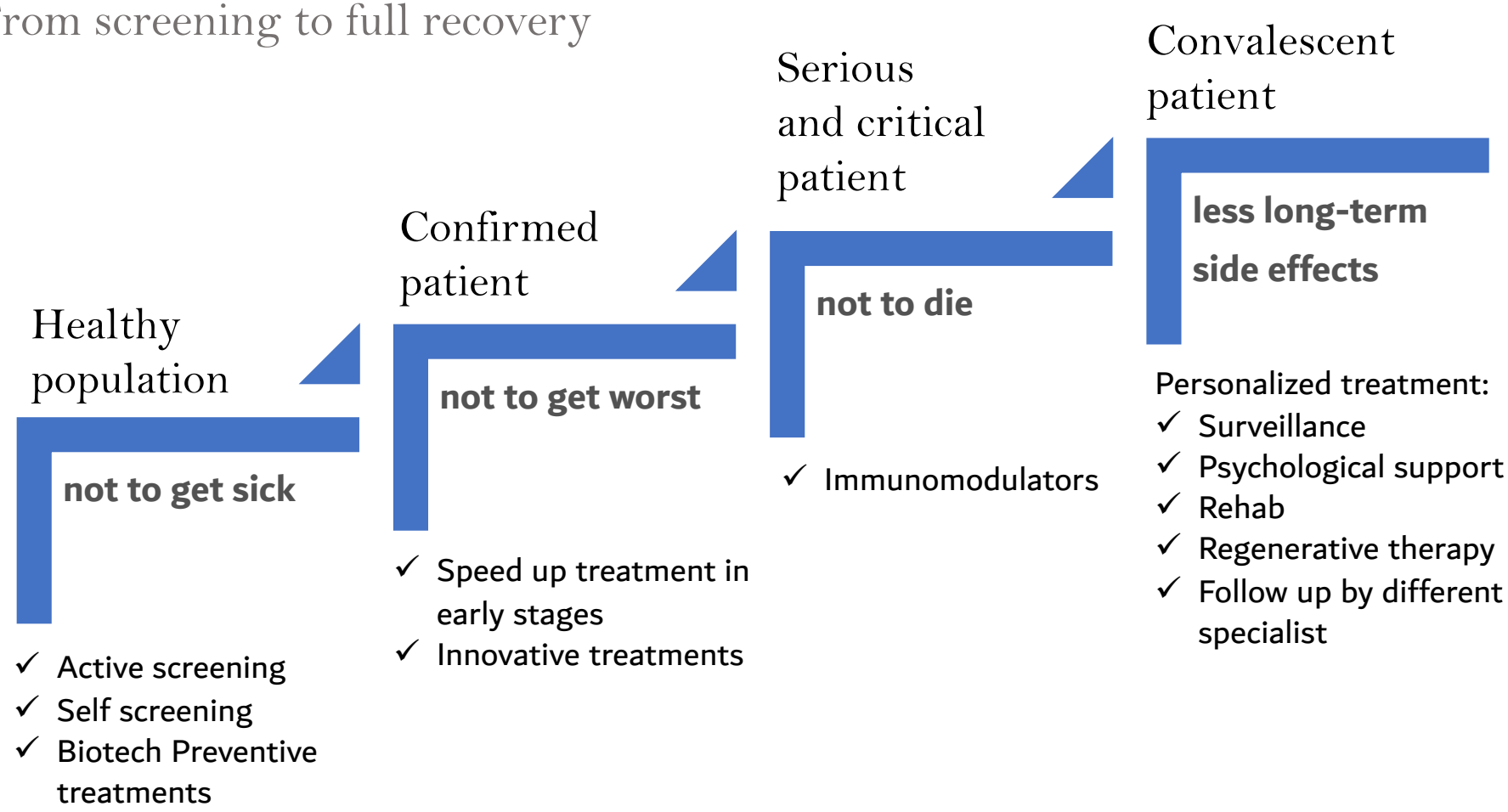
CONFIRMED	HOSPITALIZED ON SUSPICION	RECOVERED	DEATHS
6,887	**421**	**7,113**	**131**

Hospitalization and Testing–November 17, 2020/11:59 pm

TESTS STUDIED YESTERDAY	POSITIVES	TESTS STUDIED TO DATE	POSITIVES TOTAL	
7,785	**28**	**985,701**	**7,667**	**0,78 %**

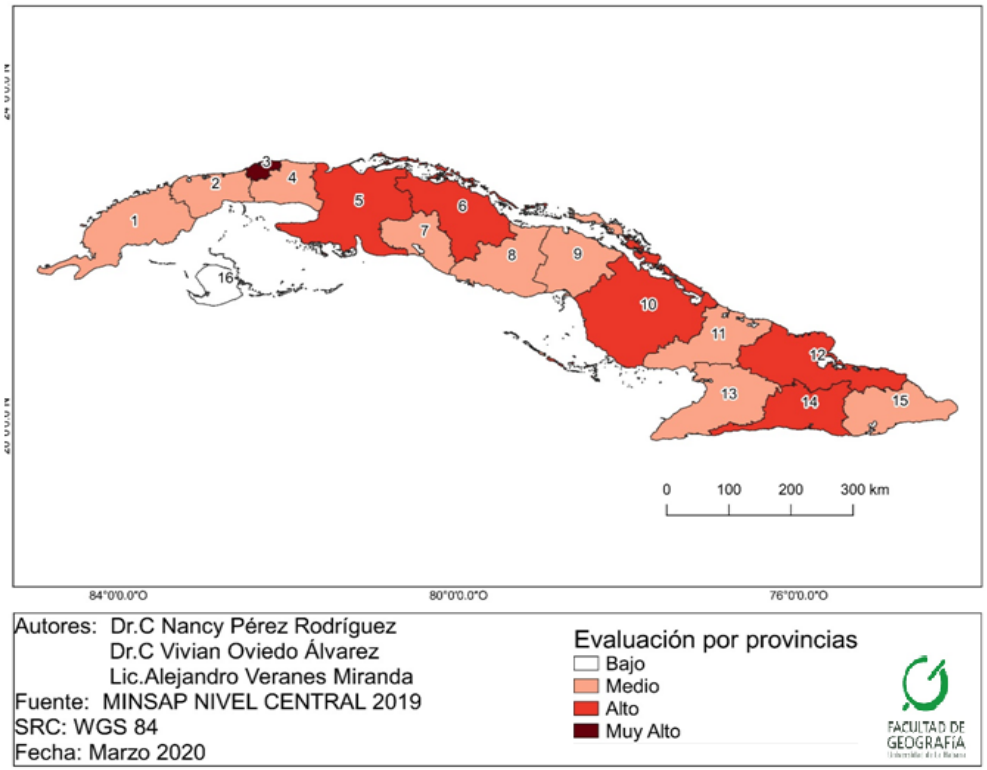
Preventive and therapeutic actions

From screening to full recovery



Vulnerable population, according to COVID-19 prevalence

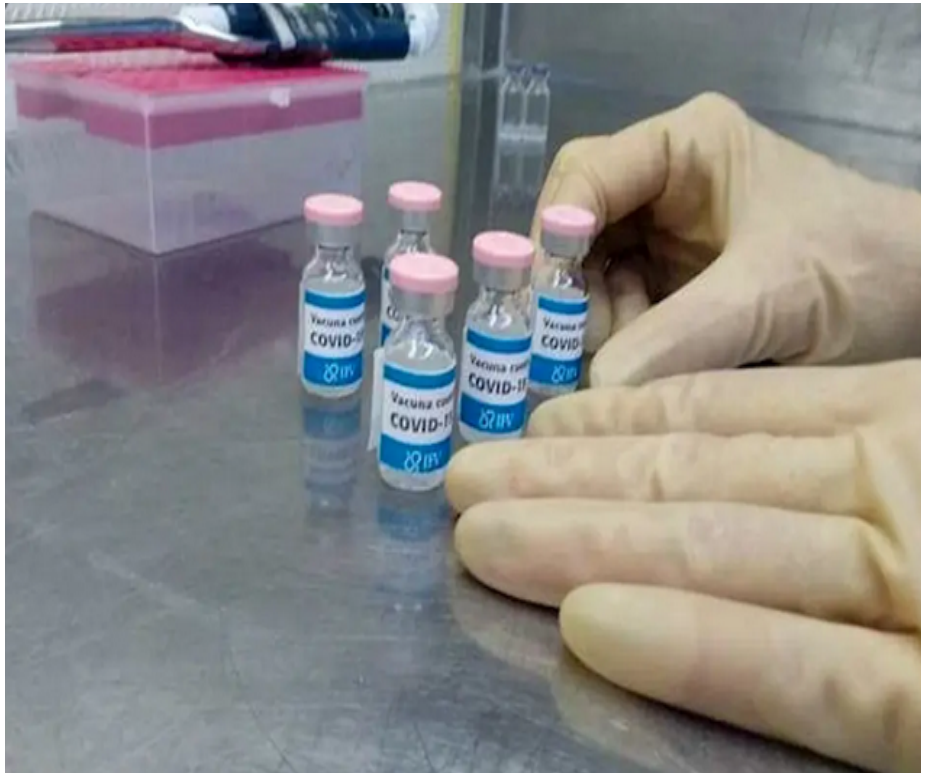
(Hypertension, ischemic heart disease, diabetes mellitus)



Aging index %

Villa Clara	23,98
La Habana	21,92
Sancti Spíritus	21,83
Pinar del Río	21,58
Camagüey	20,84
Holguín	20,78
Matanzas	20,61
Cienfuegos	20,59
Mayabeque	20,38
Las Tunas	20,35
Granma	19,76
Santiago de Cuba	19,54
Ciego de Avila	19,48
Isla de la Juventud	19,11
Guantánamo	18,66
Artemisa	18,45

Cuban vaccines



Lessons learned during Covid-19 pandemic

Dimensions	Difficulties	Actions
Preparation	Notification from the WHO about the risk of a worldwide contagion of SARS-COV-2 coronavirus.	▪ Political will ▪ Prevention and control strategy ▪ Media communication policy ▪ Adjustment on existent resources ▪ Human resources preparation
Epidemiological surveillance	Facing an unknown disease.	▪ Deployment of the Epidemiological Surveillance System with key points to identify risks.
Active screening	Highly contagious disease. Unknown seroprevalence of the population.	▪ APS and medical undergrads resources mobilization to face the pandemic. ▪ Early detection, cases isolation, critical forms and high-risk groups identification.

Lessons learned during Covid-19 pandemic

Dimensions	Difficulties	Actions
Testing	Apply tests to detect the SARS-Cov-2 virus.	Implementation of a molecular biology lab network, applying PCRs in real-time.
Biosafety	High contagion potential through air and contact.	Well established protocols and biosecurity means to protect health care workers.
Treatments	Need for accurate therapies.	▪ Creation of Therapeutic and prophylactic models and protocols. ▪ Apps, social media and other technologies for mainstream communication with the public.
Mortality	Avoid contagion, complications and death.	▪ Application of Cuban biotechnology.

Lessons learned during Covid-19 pandemic

Dimensions	Difficulties	Actions
Equity	How to guarantee that all health care services are equitable and avoid collapse.	▪ Intersectoral and community projections for all actions. ▪ Keeping health services universal and free ▪ Reordering and increasing of healthcare services capabilities. ▪ Testing completely free for all. ▪ Control and follow up of confirmed or suspicious cases.

Cuba's response conclusions

- Cuba's response to the epidemic has been among the most successful, in terms of flattening the curve and limiting viral transmission in a relatively short time, resulting in relatively low case numbers and deaths.
- Strategies particular to Cuba's epidemic response included building on the universal character of the health system and its strong primary care network by carrying out nationwide door-to-door screening for persons with febrile and respiratory symptoms, isolating confirmed cases and placing their traced contacts and suspected cases under quarantine.
- Early inclusion of researchers and scientific institutions in the design and structure of the strategies adopted.

Thank you!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