

PATENTES / VACUNAS / SALUD PUBLICA

Como se conjuga ?

Jose A. Chabalgoity

Postgrado Gestión Tecnológica - Facultad de Ingeniería

EDITORIAL · 25 MAY 2021

A patent waiver on COVID vaccines is right and fair

Wealthier countries must join the United States, Russia and China in recognizing that everyone benefits if vaccine manufacturing is distributed evenly around the world.



Katherine Tai, the US representative at the World Trade Organization, announced US support for a waiver on intellectual property for COVID vaccines on 5 May. Credit: Bill O'Leary/The Washington Post/Bloomberg/Getty

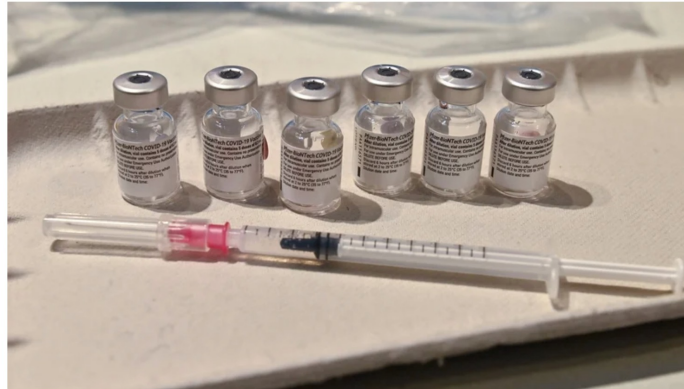
Every country should have the right to make its own vaccines during a pandemic. That's the principle underpinning the campaign to temporarily waive intellectual property (IP) protection on coronavirus vaccines...

La pandemia dejó en evidencia varias enseñanzas sobre vacunas

Importancia de poder acceder a vacunas en tiempo y forma: *escasez de vacunas*

Shortage of Covid-19 vaccines 'likely' to last several months - WHO

Updated / Sunday, 7 Feb 2021 15:12



David Nabarro said really strong public health-led services in the community are needed to combat Covid-19

many set for '10 weeks' of COVID vaccine tage

Minister Jens Spahn has warned that Germany will struggle to procure enough the next months. The government is now mulling a "vaccine summit."



World Health Organization's Special Envoy on Covid-19 David Nabarro has said there is currently a shortage of Covid-19 vaccines and it will stay like that for several months.

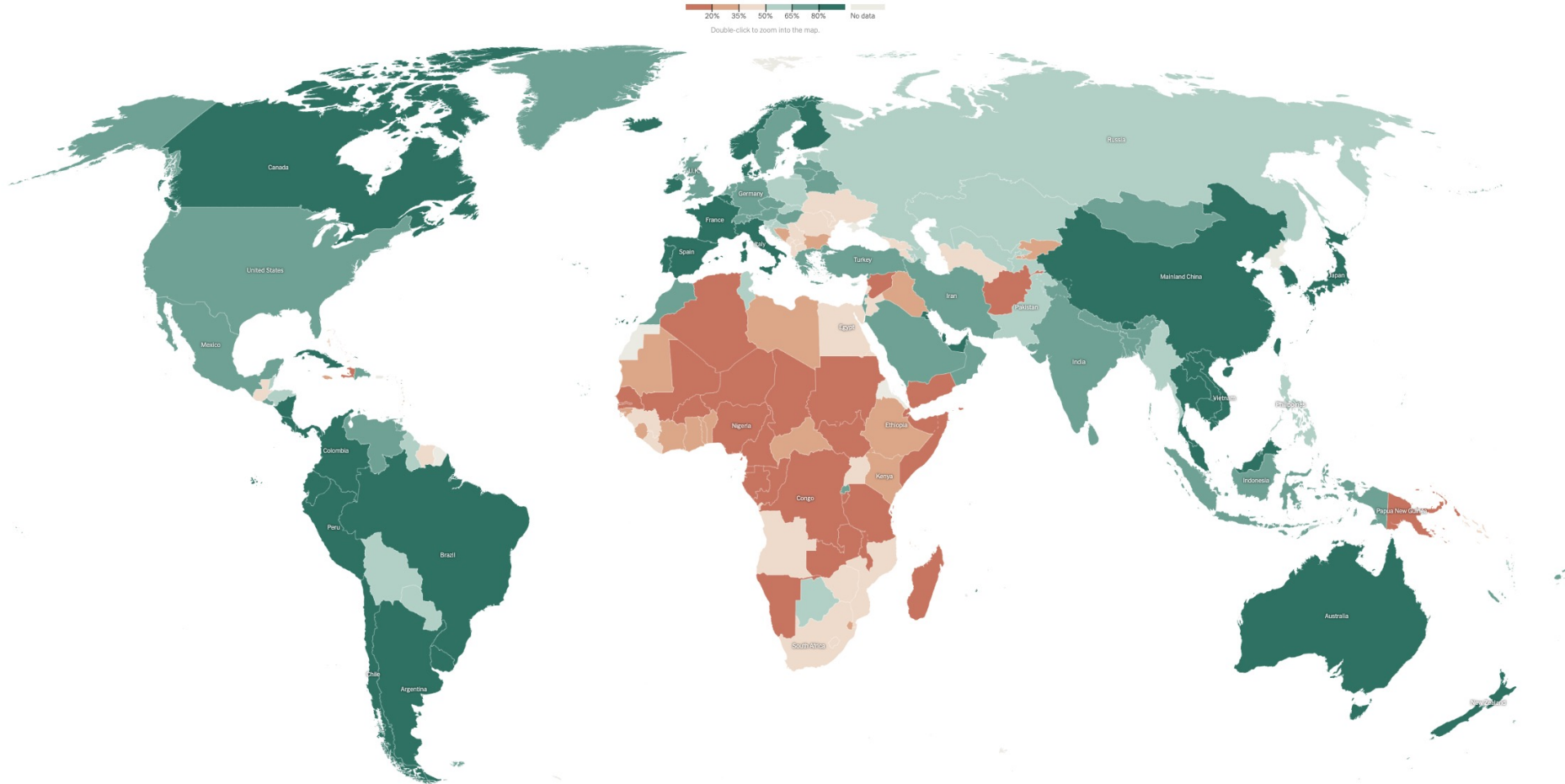


La escasez de vacunas afectó incluso a los países de las economías centrales...

Skyrocketing demand coupled with shortages of vital components is leading to bottlenecks in the supply chain of this and other mRNA vaccines, delaying vaccine supplies.

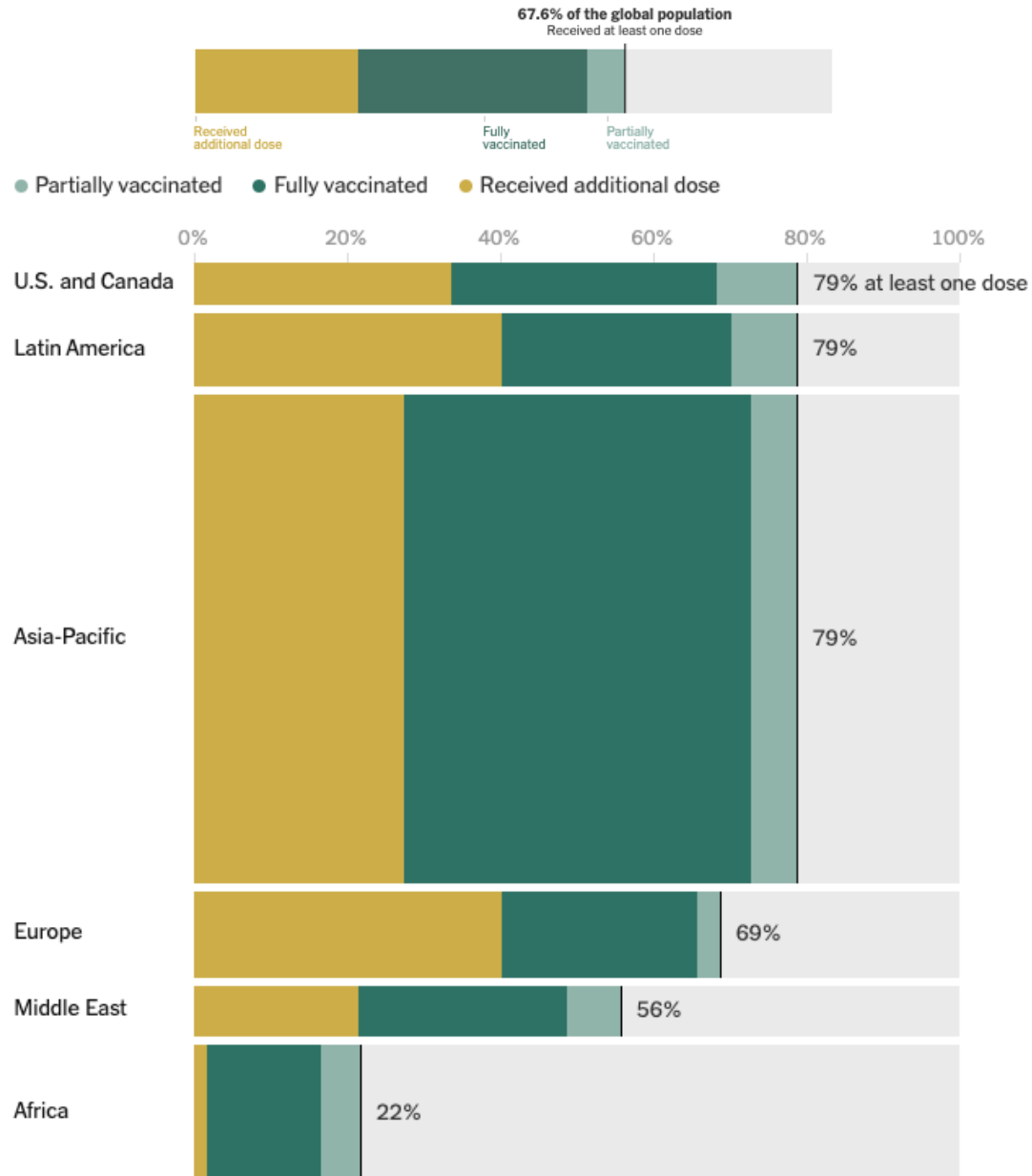
...pero mas afecto a los países mas pobres

Acceso inequitativo a las vacunas



5.180 millones de dosis administradas

Acceso inequitativo a las vacunas



La distribución equitativa de las vacunas no es solo un tema de solidaridad, es además el único reaseguro para frenar la pandemia.

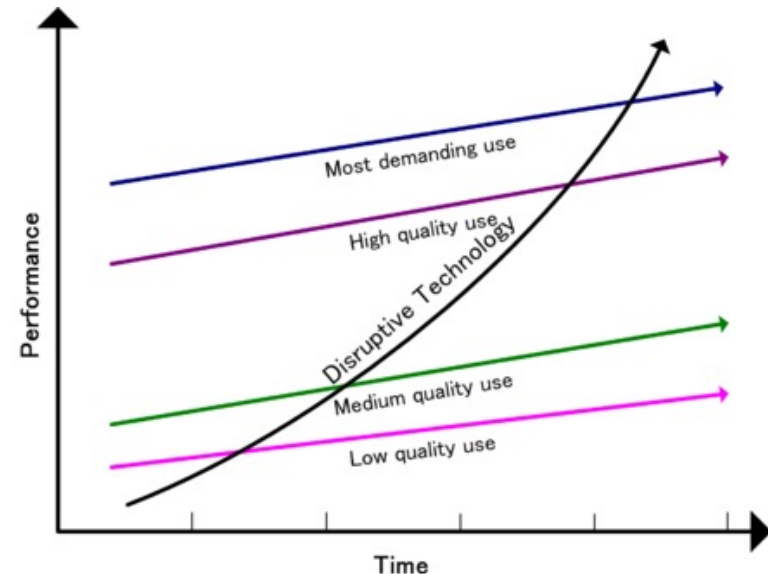
La existencia de regiones o bolsones donde el virus circule sin restricción es el escenario perfecto para que surjan nuevas variantes que por ej. sean resistente a las vacunas

Las nuevas tecnologías pueden modificar profundamente la realidad

*En **menos de un año**, se diseñaron, desarrollaron, evaluaron clínicamente y comenzaron a producirse varias **vacunas de efectividad comprobada** contra el virus*

Vacunas basadas en ARNm: la emergencia de una tecnología disruptiva

Disruptive technology is **an innovation that significantly alters the way that consumers, industries, or businesses operate**. A disruptive technology sweeps away the systems or habits it replaces because it has attributes that are recognizably superior.



Vacunas a RNAm tecnologia disruptiva



The Limitless Future of RNA Therapeutics

Tulsi Ram Damase¹, Roman Sukhovshin¹, Christian Boada², Francesca Taraballi^{3,4}, Roderic I. Pettigrew² and John P. Cooke^{1}*

¹ RNA Therapeutics Program, Department of Cardiovascular Sciences, Houston Methodist Research Institute, Houston, TX, United States, ² Colleges of Medicine, Engineering, Texas A&M University and Houston Methodist Hospital, Houston, TX, United States, ³ Center for Musculoskeletal Regeneration, Houston Methodist Research Institute, Houston, TX, United States, ⁴ Department of Orthopedics and Sports Medicine, Houston Methodist Hospital, Houston, TX, United States

It is a disruptive therapeutic technology, as **small biotech startups**, as well as **academic groups**, can rapidly **develop new and personalized RNA constructs**

Las vacunas pueden ser un gran negocio económico

July 28, 2021 10:32 AM EDT Updated 11:00 AM

Pharma, Coronavirus



When a life-saving vaccine became a cash cow: Pfizer now projects **\$33.5B in Covid-19 vaccine sales in 2021 alone**

August 2, 2021 06:08 PM EDT Updated 11 minutes ago

Deals



UPDATED: Sanofi buys mRNA player Translate Bio for \$3.2B.

Las vacunas pueden ser un gran negocio economico

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[Global Agenda](#) | [COVID-19](#) | [Global Health](#) | [Healthcare Delivery](#)

The COVID vaccine market is worth at least \$150 billion.



Empty vials of Pfizer/BioNTech's Comirnaty vaccine. Image: Reuters

Producción nacional de vacunas

Dimensión ética (Salud Pública)

Dimensión Económica

El drama para Salud Pública

thebmj | *BMJ* 2020;368:l4627 | doi: 10.1136/bmj.l4627

ACHIEVING FAIR PRICING OF MEDICINES

Pricing of pharmaceuticals is becoming a major challenge for health systems

Manufacturers using their market power to maximise profits results in prices that are unjustifiable and unaffordable, argue **Steven Morgan and colleagues**

KEY MESSAGES

- Providing universal access to necessary medicines creates tremendous social value but poses a significant policy challenge owing to the costs involved
- Many medicines are being priced at levels unaffordable for payers while more than adequately compensating sellers for costs incurred or lacking justification in their benefits to health systems
- Governments, individually and collectively, must develop laws, policies, and institutional capacity that would prevent such “unfair” pricing

Patentes / Propiedad Intelectual

El paradigma de desarrollo de la Biotecnología

*El valor de una empresa biotecnológica es
directamente proporcional al valor de su
portafolio de patentes*

Las patentes son el reaseguro de las empresas para recuperar la inversión en generar la innovación

*The rapid development and clinical success of COVID-19 vaccines can be credited to the relationship between **inventors** and **innovators***

PATENTS

A network analysis of COVID-19 mRNA vaccine patents

A preliminary network analysis highlights the complex intellectual property landscape behind mRNA-based COVID-19 vaccines.

The COVID-19 pandemic has had a substantial impact on global health and highlighted the importance of international cooperation to effectively combat SARS-CoV-2. Since the discovery and publication of the virus's genome in January 2020, scientists have rushed to develop vaccines, therapeutics and diagnostics on an unprecedented timescale. To date there are 80 vaccines in clinical trials and 70 more in clinical development, setting the stage for some of the fastest vaccine development and testing in modern history¹. The vaccine technology platforms used

by the most promising vaccine candidates range from viral vector-based and protein-based technologies to mRNA and lipid nanoparticle technology. Despite these impressive scientific achievements, barriers such as the vaccine cold chain and multiple forms of intellectual property (IP) protection stand in the way of equitable access and fair allocation.

Webs of intellectual property claims underpin the marketing of many vaccines. For example, the underlying technology used to develop a vaccine can be protected by patents, while manufacturing methods

and techniques (know-how) can be protected by trade secrets. Therapeutic development programs tend to consist of an intricate relationship between an inventor and an innovator². The foundational technology needed to develop a vaccine could have been invented in an academic lab setting or startup research firm, protected through patents, and subsequently licensed out to a larger entity for further development and commercialization. These larger entities are designated as innovators because they transform the foundational technology into the final market product.

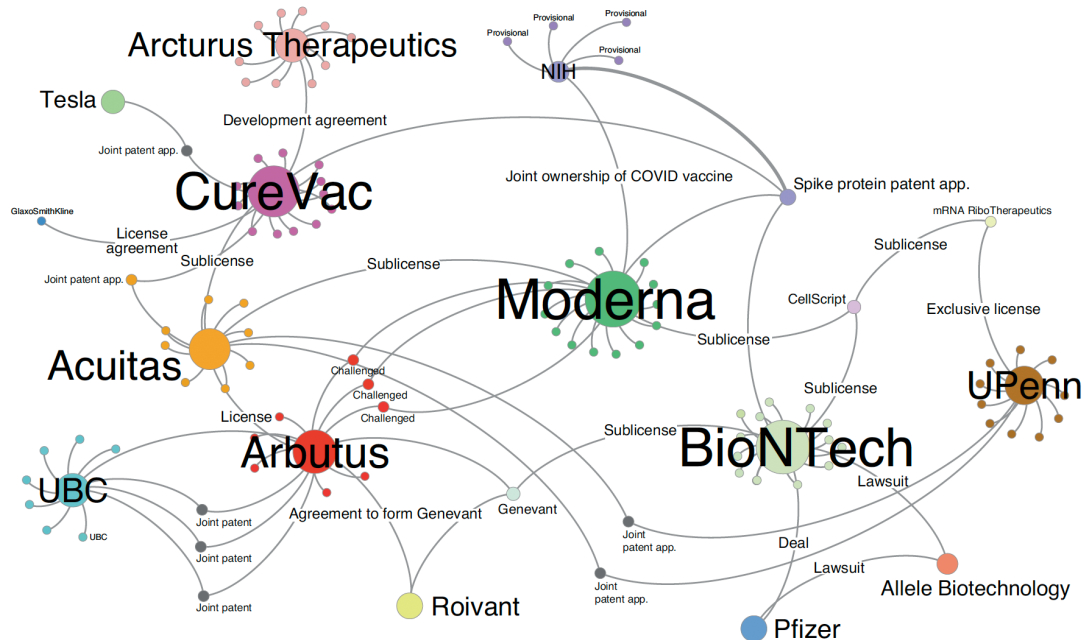


Fig. 1 | Patent network analysis of mRNA-based vaccine candidates for COVID-19. Large nodes represent the relevant entities while the edges represent agreements or patents between two entities. Smaller nodes around the entities represent patents that were identified as being relevant to the underlying vaccine technology (Supplementary Information). The network analysis was developed using Gephi²³. UPenn, University of Pennsylvania; UBC, University of British Columbia; app., application.

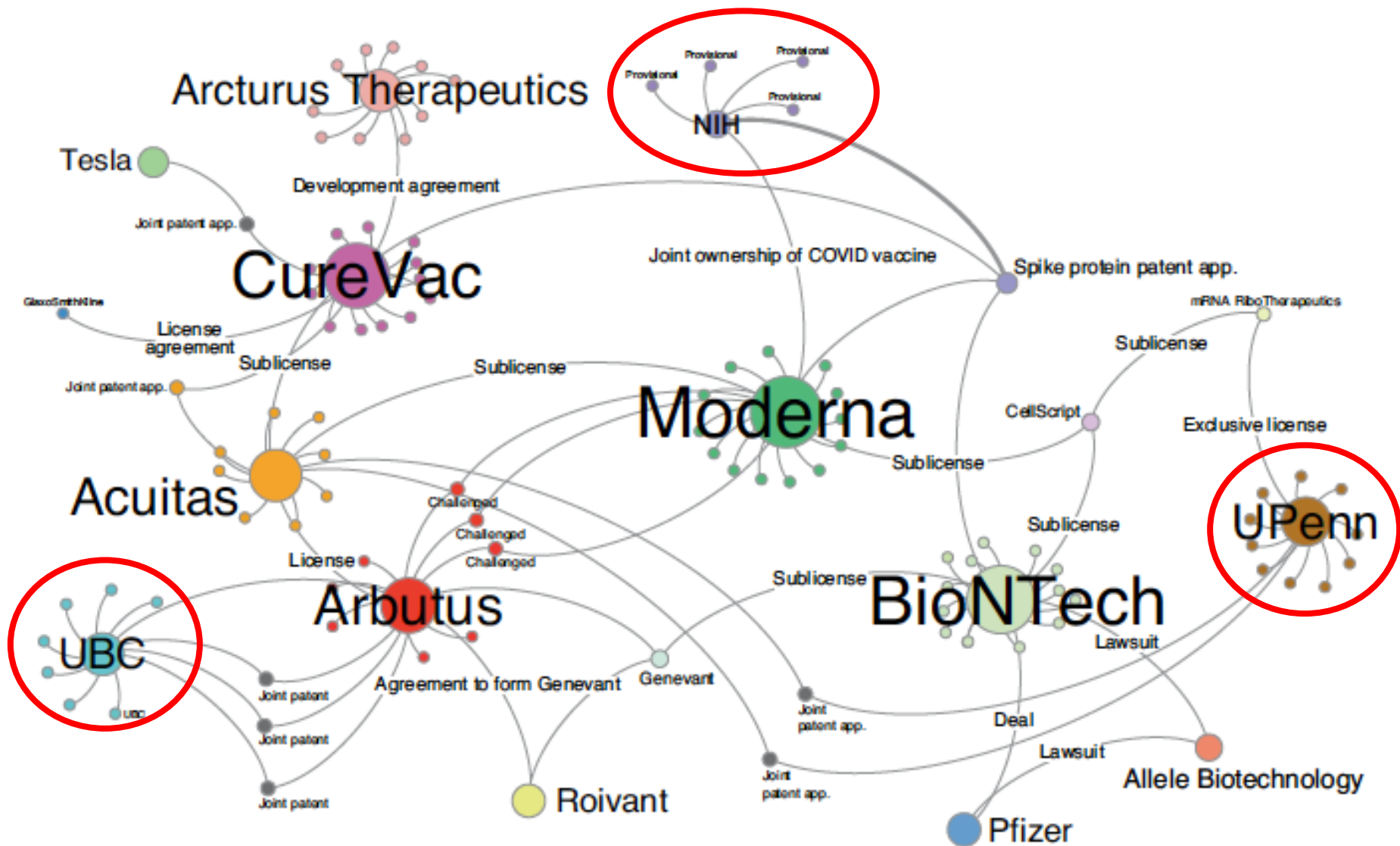


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**La investigación médica es una
cuestión pública.**

Dr. Christian Wagner BUKO Pharma Campaign

Sanford Burham points to **the critical role independent research institutes can play.** Backed with funding from federal grants, philanthropy, and the pharmaceutical industry, **such institutes can perform the discovery and translational now seen as too risky for industry**



Michael Jackson
Vice president of
drug discovery,
Sanford Burnham
Medical Research
Institute

... pound library of a large pharmaceutical. It's Center for Chemical Genomics has about 80 people from biotech and pharma who work side-by-side with principal investigators from Sanford Burnham to identify new drug targets and new pathways for diseases, and have developed the assays and reagents needed to explore them. It has the ability to use induced pluripotent stem cells from patients with diseases and examine them with high throughput microscopy screening.

As financial pressures are forcing Big Pharma to pull back from investing in early-stage research and financial constraints on biotech are forcing more conservative approaches, Sanford Burham points to the critical role independent research institutes can play. Backed with funding from federal grants, philanthropy, and the pharmaceutical industry, such institutes can perform the discovery and translational now seen as too risky for industry.

"Pharma used to be larger and more exploitive and possibly more innovative, and had a bit more opportunities to go wherever the molecules took them. Increasingly today, that's not the case," says Jackson. "As the money has shrunk, the people who have got the power in the majority of pharmas are in the marketing organization, which then dictates to the development organization what it wants, which then dictates to research what it wants."

Jackson argues the current model for drug development is not sustainable. The irony is



David Kessler testifies during a Senate hearing in May (Jim Lo Scalzo/Pool via AP Images)

October 14, 2021 06:24 AM EDT Updated 06:52 AM | Coronavirus



Biden's fight with Moderna over providing vaccines for the poorest countries intensifies

Dimensión Económica

Biotecnología como motor de desarrollo económico

El negocio económico de la biotecnología

Biotechnology Market Size Worth \$2.44 Trillion By 2028 | CAGR 15.83%

NEWS PROVIDED BY

[Grand View Research, Inc.](#) →

Apr 13, 2021, 05:05 ET

SAN FRANCISCO, April 13, 2021 /PRNewswire/ -- The global [biotechnology market](#) size is expected **to reach USD 2.44 trillion by 2028**, according to a new report by Grand View Research, Inc. It is expected **to expand at a CAGR of 15.83% from 2021 to 2028**. The factors driving the market include favorable government policies, the launch of new and advanced products, robust investment in the biotechnology sector, and rising demand for synthetic biology.

Key suggestions from the report:

- **The health application segment accounted for the largest share of 48.64% in 2020** owing to the COVID-19 impact, prevalence of diseases, increasing focus on the development of regenerative medicines, and improving healthcare infrastructure

Biotecnología como motor de desarrollo económico

AREA PRIORIZADA (PENCTII)

BIOTECNOLOGÍA BIOMÉDICA EN URUGUAY

*Caracterización y recomendaciones
para la definición de una nueva
área de oportunidad*

José A. Chabalgoity

Abril 2006

Producción Nacional de Vacunas

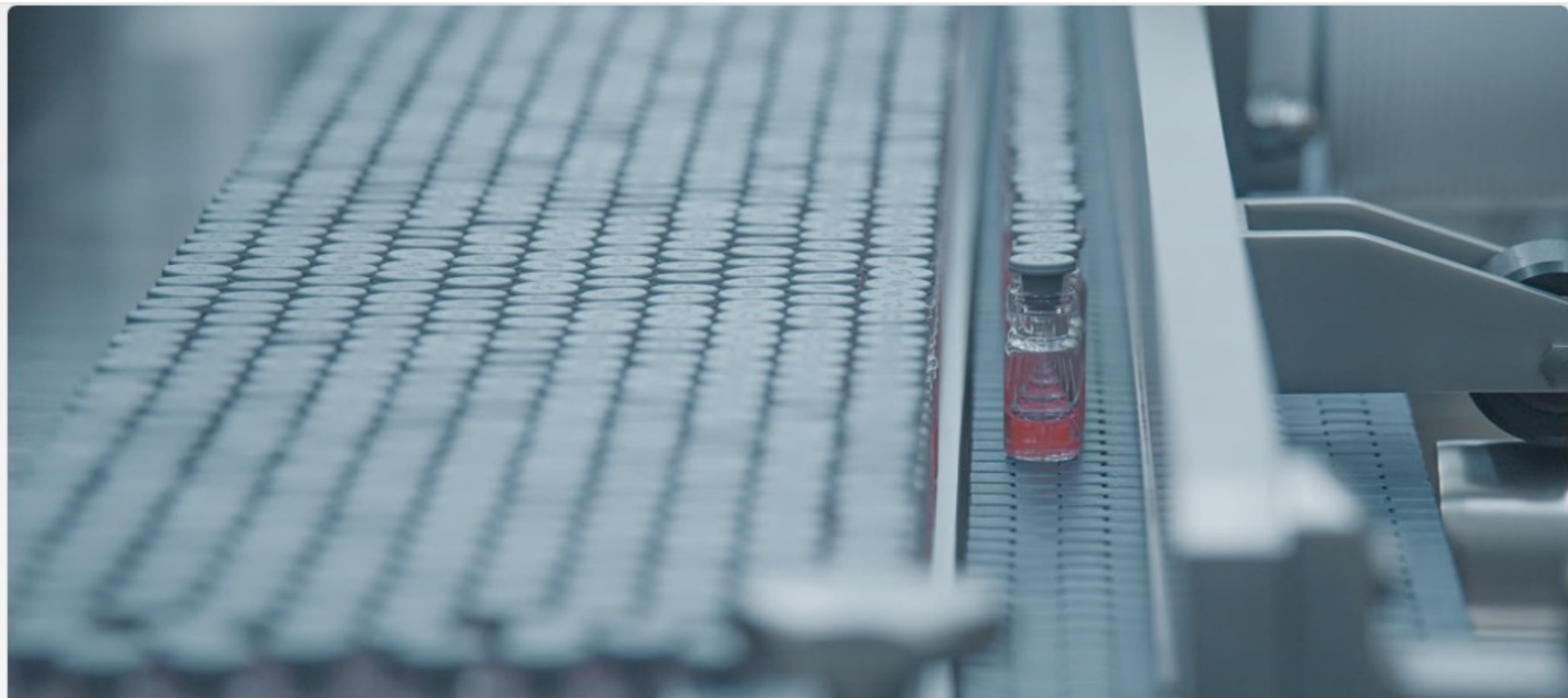
Oportunidades y Desafíos

Oportunidades

- Industria que genera alto nivel de empleo
- Uruguay cuenta con un volumen básico de RRHH altamente calificados
- Infraestructura estratégica versátil
- Diversos modelos de negocios posibles
- Demanda insatisfecha de vacunas

Oportunidades

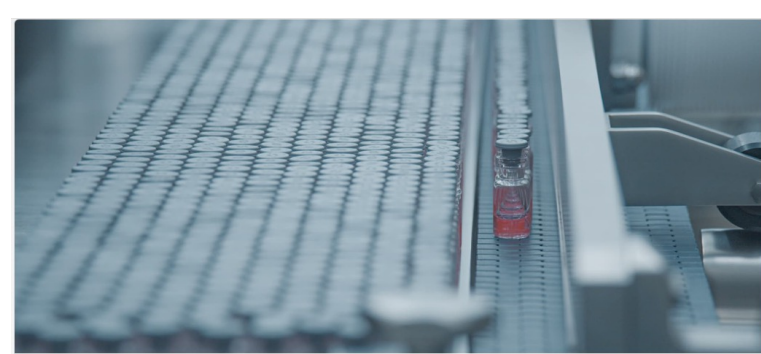
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- Demanda insatisfecha de vacunas



SPONSORED September 27, 2021 06:00 AM EDT



Why it Works: Manufacturing a Vaccine in a Multi-Product Facility.



SPONSORED September 27, 2021 06:00 AM EDT



Why it Works: Manufacturing a Vaccine in a Multi-Product Facility.

In 2020, the U.S. Department of Health and Human Services and the U.S. Department of Defense called upon CDMOs to support the expansion of the United States' capacity for manufacturing and distributing vaccines or therapeutics related to the COVID-19 pandemic. One example is through a public-private partnership where the federal government reserved fill/finish capacity on a CDMO's commercial filling line for use by federal partners that are developing COVID-19 vaccines or therapeutic treatments. That company's capacity not only supported the U.S. government's Operation Warp Speed efforts and the COVID-19 pandemic response but also supports an increase in U.S. preparedness for future public health emergencies.

Now more than ever flexibility is key to success in the pharmaceutical manufacturing industry, specifically for CDMOs that serve a variety of clients and products. Combine heightened awareness with elevated demand and reduced timelines, and the demand of CDMO capacity, quality, and modern equipment have increased exponen-



SPONSORED September 27, 2021 06:00 AM EDT



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Adaptability is Key



The Power of Flexible Technology

The Value of Experience



Looking Ahead



Oportunidades

- Industria que genera alto nivel de empleo
- Uruguay cuenta con un volumen básico de RRHH altamente calificados
- Infraestructura estratégica versátil
- **Diversos modelos de negocios posibles**
- Demanda insatisfecha de vacunas



biofuture™

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October 5-6, 2021
New York City

August 10, 2021 10:15 AM EDT Updated 10:29 AM | Coronavirus, Manufacturing

[🔗](#) [in](#) [🐦](#)

Moderna strikes a deal with Canada to build an mRNA manufacturing center — and it's looking for more global pacts just like it



Establishment of a COVID-19 mRNA vaccine technology transfer hub to scale up global manufacturing

16 April 2021 | Expression of interest

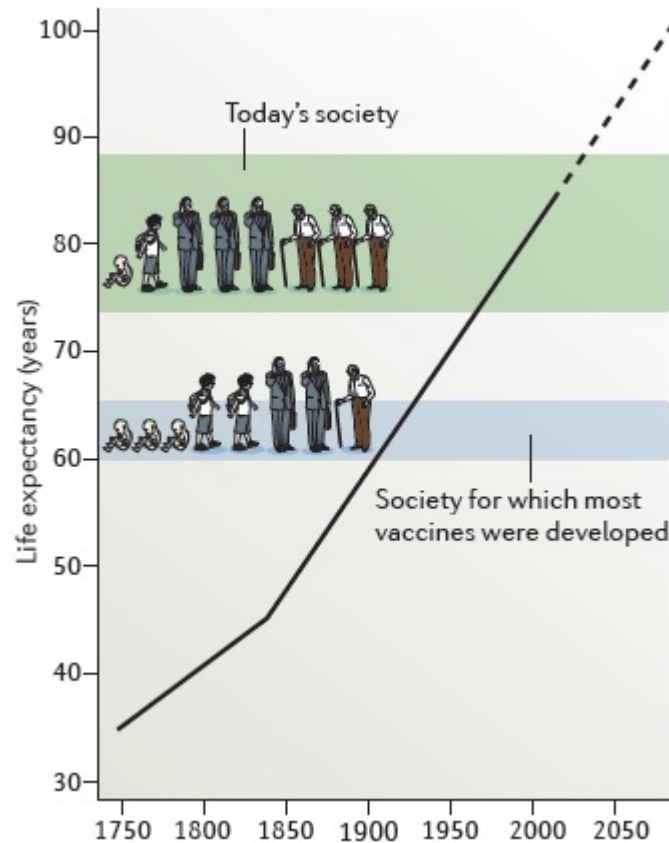
WHO and its partners are seeking to expand the **capacity of low- and middle-income countries (LMICs) to produce COVID-19 vaccines and scale up manufacturing to increase global access to these critical tools to bring the pandemic under control.**

WHO will facilitate the establishment of one (or more, as appropriate) technology transfer¹ hub(s) that will use a **hub and spoke model** (REF) to transfer a comprehensive technology package and provide appropriate training to interested manufacturers in LMICs. This initiative will initially prioritize the mRNA-vaccine technology² but could expand to other technologies in the future.

Oportunidades






- Industria que genera alto nivel de empleo
- Uruguay cuenta con un volumen básico de RRHH altamente calificados
- Infraestructura estratégica versátil
- Diversos modelos de negocios posibles
- **Demanda insatisfecha de vacunas: actual y futura**

Los nuevas realidades sociológicas: vacunas para el siglo XXI



Las nuevas vacunas necesarias

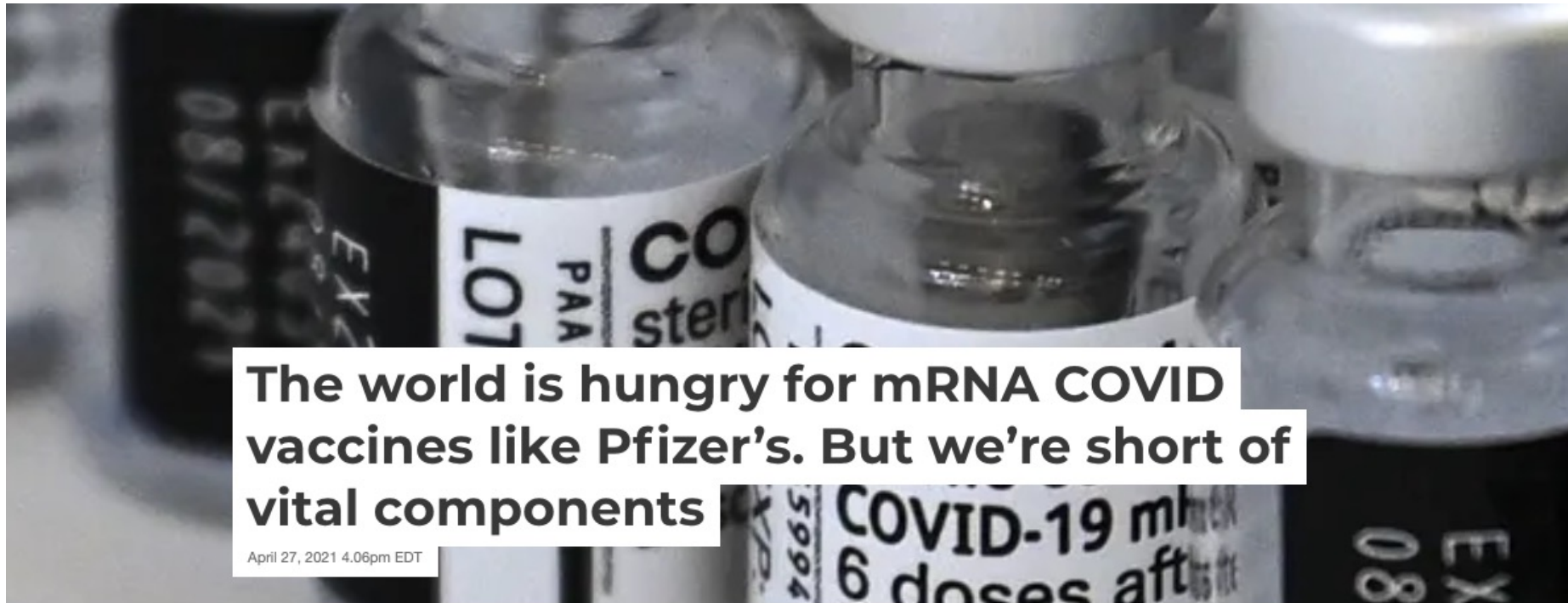
a Age groups

<p>Pre-birth</p> <ul style="list-style-type: none"> • Cytomegalovirus • Group B streptococcus • Hepatitis B virus • Influenza virus • Meningococcus serogroups A, B, C, Y and W135 • Pertussis • Respiratory syncytial virus • Tetanus 	<p>Infants and children</p> <ul style="list-style-type: none"> • Diphtheria • Group A streptococcus • <i>H. influenzae</i> type b • <i>Helicobacter pylori</i> • Hepatitis A virus • Hepatitis B virus • Inactivated poliovirus vaccine • Influenza virus • Measles • Meningococcus serogroups A, B, C, Y and W135 • Mumps • Pertussis • Pneumococcus • Respiratory syncytial virus • Rotavirus • Rubella • Tetanus • Varicella zoster virus 	<p>Adolescents</p> <ul style="list-style-type: none"> • Cytomegalovirus • Diphtheria, tetanus acellular pertussis • Epstein-Barr virus • Herpes simplex virus • Human papilloma virus • Influenza virus • Meningococcus serogroups A, B, C, Y and W135 • Parvovirus B19 	<p>Adults</p> <ul style="list-style-type: none"> • Diphtheria • Hepatitis B virus • Influenza virus • Meningococcus serogroups A, B, C, Y and W135 • Pertussis • Respiratory syncytial virus • Tetanus 	<p>Elderly</p> <p>Recurrent infections:</p> <ul style="list-style-type: none"> • Group B streptococcus • Influenza virus • Meningococcus serogroups A, B, C, Y and W135 • Pneumococcus • Respiratory syncytial virus • Varicella zoster virus <p>Antibiotic resistance:</p> <ul style="list-style-type: none"> • <i>Acinetobacter baumannii</i> • <i>C. difficile</i> • <i>Candida</i> spp. • Enterotoxigenic <i>E. coli</i> • <i>Klebsiella pneumoniae</i> • <i>P. aeruginosa</i> • <i>S. aureus</i> <p>Cancer:</p> <ul style="list-style-type: none"> • Breast cancer • Colorectal cancer • Prostate cancer 
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b Special target groups

<p>Travellers</p> <ul style="list-style-type: none"> • Cholera • Dengue • Enterotoxigenic <i>E. coli</i> • Hepatitis A virus • Hepatitis B virus • Influenza virus • Japanese encephalitis virus • Malaria • Meningococcus serogroups A, B, C, Y, W135 and X • Paratyphoid fever • Rabies • <i>Shigella</i> spp. • Tick-borne encephalitis virus • Tuberculosis • Typhoid fever • Yellow fever 	<p>Patients with chronic diseases</p> <ul style="list-style-type: none"> • Cytomegalovirus • Fungal infections • Influenza virus • <i>P. aeruginosa</i> • Parainfluenza • Parvovirus B19 • Respiratory syncytial virus • <i>S. aureus</i> • Tuberculosis 	<p>Patients with HIV</p> <ul style="list-style-type: none"> • Influenza virus • Pneumococcus • Pneumocystosis • Tuberculosis 	<p>Emerging infection</p> <ul style="list-style-type: none"> • AIDS • Anthrax • Avian influenza • Cholera • Dengue • Diphtheria • Ebola virus disease • EV71 • Malaria • Meningococcus serogroup X • Plague • SARS • Smallpox • Swine influenza • Tuberculosis • West Nile 	<p>Poverty</p> <ul style="list-style-type: none"> • Cholera • Dengue • Enterotoxigenic <i>E. coli</i> • Hepatitis A virus • Hepatitis B virus • Hepatitis E virus • Influenza virus • Japanese encephalitis virus • Malaria • Meningococcus serogroups A, B, C, Y, W135 and X • Parasitic infections • Paratyphoid fever • Rabies • Rotavirus • <i>Salmonella</i> spp. • <i>Shigella</i> spp. • Tuberculosis • Typhoid fever • Yellow fever
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Desafíos que generan oportunidades...



The world is hungry for mRNA COVID vaccines like Pfizer's. But we're short of vital components

April 27, 2021 4:06pm EDT

Georgi Licovski/EPA/AAP

Email

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Facebook

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Print

46

166

Given the AstraZeneca COVID-19 vaccine is no longer recommended for under-50s following news of very rare blood clots, Australia is looking to other vaccines to plug the gap.

Pfizer's mRNA vaccine will become the mainstay of the rollout, with 40 million doses expected to arrive before year's end.

But Australia isn't the only country eager to get its hand on this vaccine.

Skyrocketing demand coupled with shortages of vital components is leading to bottlenecks in the supply chain of this and other mRNA vaccines, delaying

Desafíos que generan oportunidades...

Lipids, the unsung COVID-19 vaccine component, get investment

Several specialty chemical companies are adding capacity to supply Moderna and Pfizer-BioNTech

by **Michael McCoy**

February 12, 2021



Credit: Evonik Industries

Evonik will add production of specialty lipids at this facility in Dossenheim, Germany.

Desafíos que generan oportunidades...

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September 28, 2021 10:57 AM EDT Updated September 29, 06:56 AM | R&D, In Focus



ENDPOINTS *in* FOCUS

Contract research is having a moment right now. Will M&A splashes drive the industry to even greater heights?

Desafíos para la producción nacional de vacunas

- Capacidad de realizar ensayos clínicos en el país (*NECESIDAD de normativa*)
- Capacidad de acordar licenciamiento de vacunas ya en uso para su producción en el país (*NECESIDAD de infraestructura adecuada, plataformas tecnológicas, RRHH operativos y normativa*)
- Capacidad de generar información científicamente robusta del impacto de vacunación (*la pandemia ha generado oportunidades en esto*)
- Posibilidad de atraer inversores (*NECESIDAD de generar un "ambiente de negocios" adecuado*)

Más Universidad al servicio del país.



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URUGUAY

UNIVERSIDAD DE LA REPÚBLICA - PROPUESTA DE LA UNIVERSIDAD AL PAÍS - RENDICIÓN DE CUENTAS 2020

ANEXO 3

11. Propuesta de creación del Instituto de Investigación en Vacunas

