

# Aprendizados e desafios trazidos pela Pandemia

Recife  
20 de Outubro de 2022

CBDEH

**PROVEDORES**

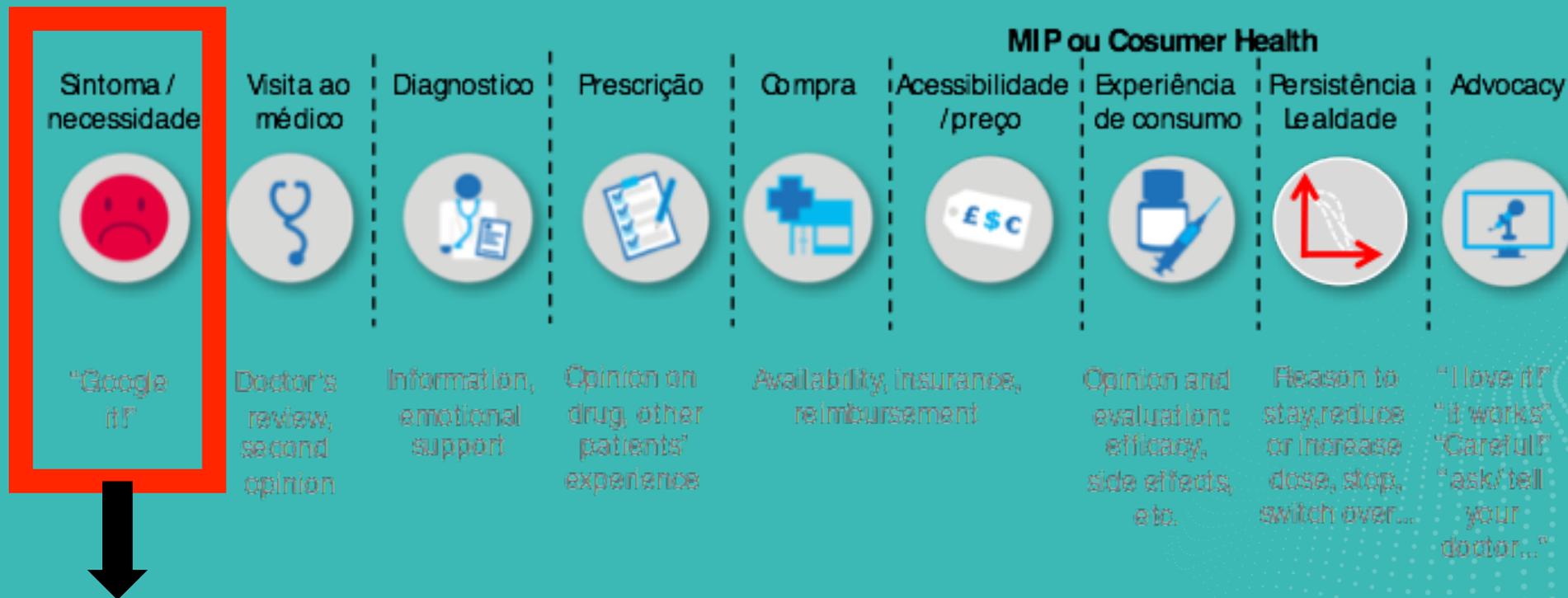
HOSPITAIS

MÉDICOS

FARMÁCIAS

IDNs

# Health Care Journey Experience



O "Google/Internet" é o único 'ponto de contato digital' para busca de informações sobre sintomas e possíveis tratamentos

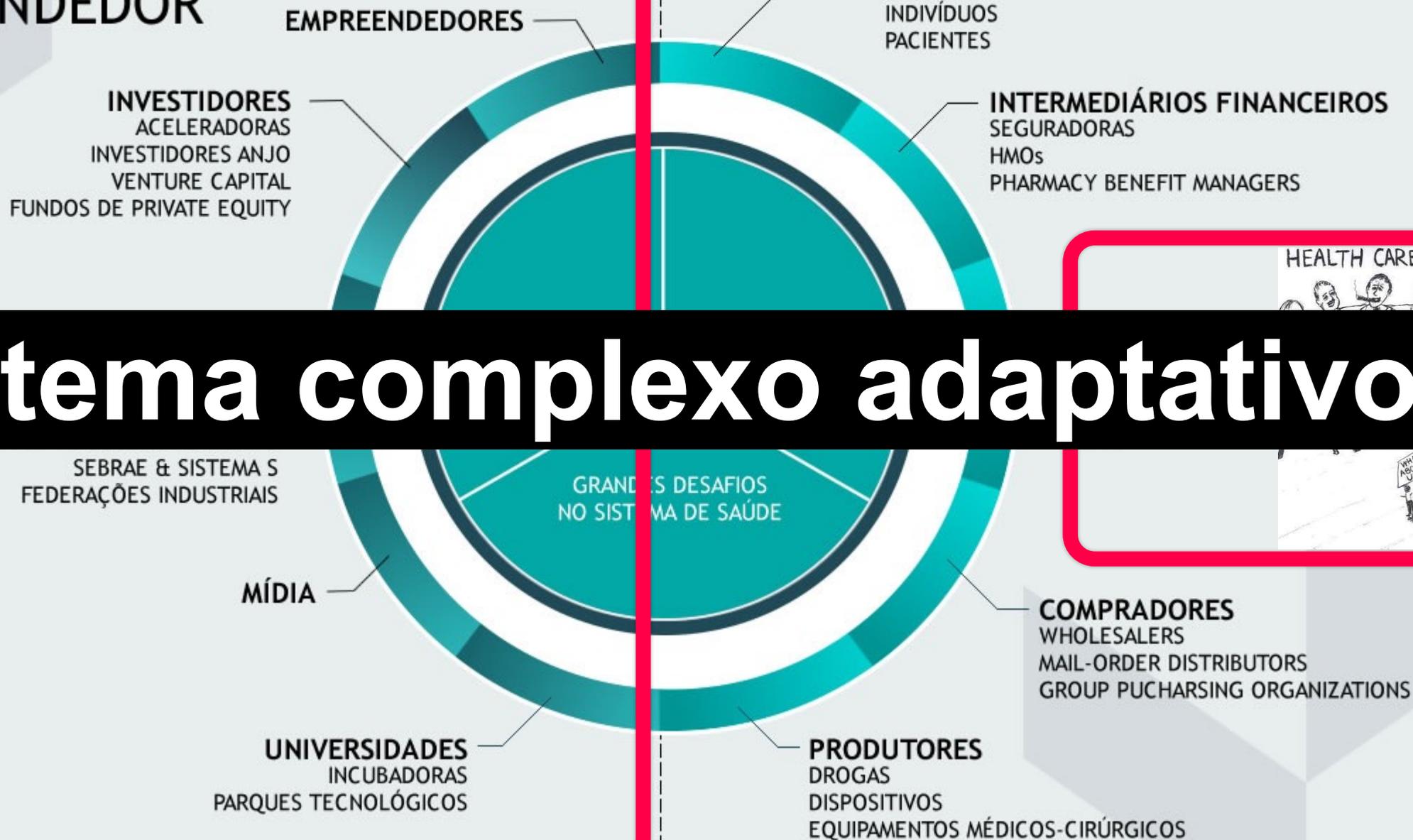
Em um futuro próximo, haverá uma penetração maior de “health gadgets” e os canais digitais serão cada vez mais relevantes à jornada do consumidor



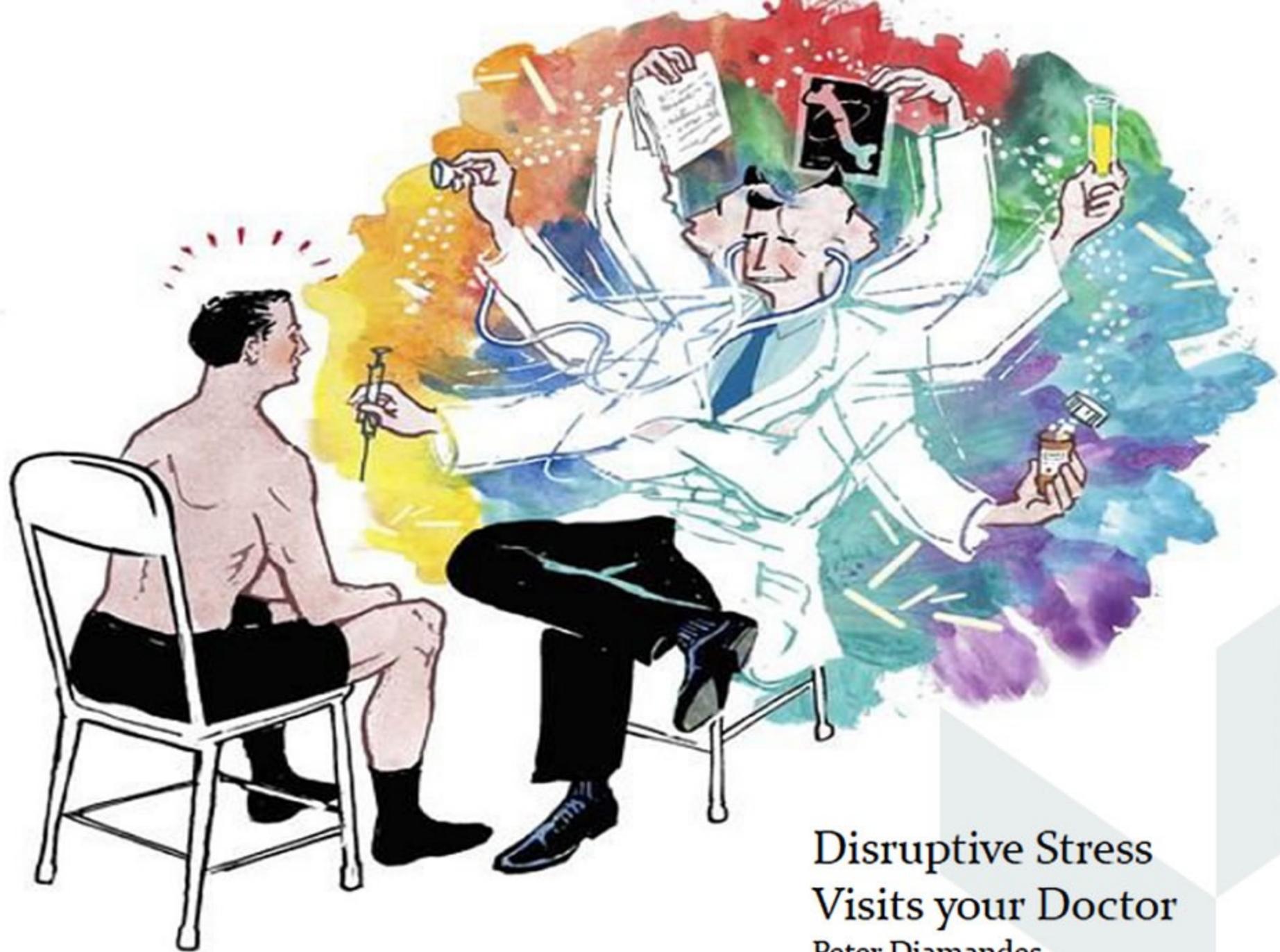
... Inclusive influenciando a decisão de compra de medicamentos baseado em diagnóstico digital

# O ECOSISTEMA EMPREENDEDOR

# A CORRENTE DE VALORES DA SAÚDE



# Sistema complexo adaptativo



Disruptive Stress  
Visits your Doctor  
Peter Diamandes

# Colapso de Contexto



COLLAPSE

# Colapso de Referências

**VUCA**

Volátil, Incerto, Complexo, Ambíguo

Sars-CoV-2

COVID 19

**BANI**

Frágil, ansioso, não linear, Incompreensível



# ANVISA APROVOU

## Wearables

as Medical Devices.

25/05/2020



- Dispositivos
- com evidencia científica

## Softwares

as Medical Devices.

01/07/2022



- “Software”
- com evidência científica



# DEPUTADOS APROVARAM

## 27/04/22

### Telessaúde

### Todas as profissões de Saúde

SAÚDE

#### Deputados aprovam projeto que regulamenta telessaúde

Texto seguirá para o Senado

27/04/2022 - 22:31 • Atualizado em 27/04/2022 - 23:17

A Câmara dos Deputados aprovou nesta quarta-feira (27) o projeto de lei que autoriza e conceitua a prática da telessaúde em todo o território nacional, abrangendo todas as profissões da área da saúde regulamentadas. A proposta (PL 1998/20) será enviada ao Senado.





# Wearables as a Medical Devices

- Dispositivos com evidencia científica

## ECG APPLE WATCH

- Aprovado pela Anvisa em 2020

**Você Pode Fazer um Eletrocardiograma no Apple Watch.**  
O app ECG grava os seus batimentos usando a Digital Crown do Apple Watch. O app verifica a gravação em busca de fibrilação atrial, uma forma de ritmo cardíaco irregular.

**Configuração do App ECG**  
O ritmo do seu coração pode afetar a sua saúde no geral. O app ECG grava os seus batimentos usando a Digital Crown do Apple Watch. Após fazer uma gravação, o app ECG verifica a existência de fibrilação atrial, uma forma de ritmo cardíaco irregular.

**Configuração do App ECG**  
O app ECG não está disponível na sua região.

**Seleção da data de nascimento para continuar.**  
Nascimento: 17 de nov de 1988

Sua data de nascimento será usada apenas para confirmar que você tem idade suficiente para usar o app ECG. Durante a configuração, a sua localização será usada para garantir que este recurso esteja disponível na sua região.



# Softwares as a Medical Devices ( SAMD )

## Terapêutica Digital

- Prevenir
  - Gerenciar
  - Tratar
- 
- Softwares com evidencia científica

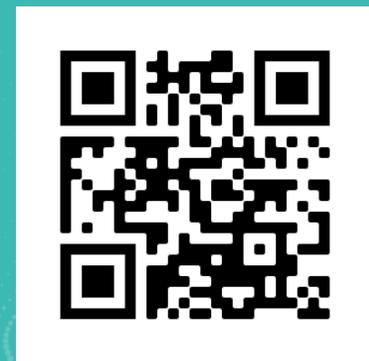
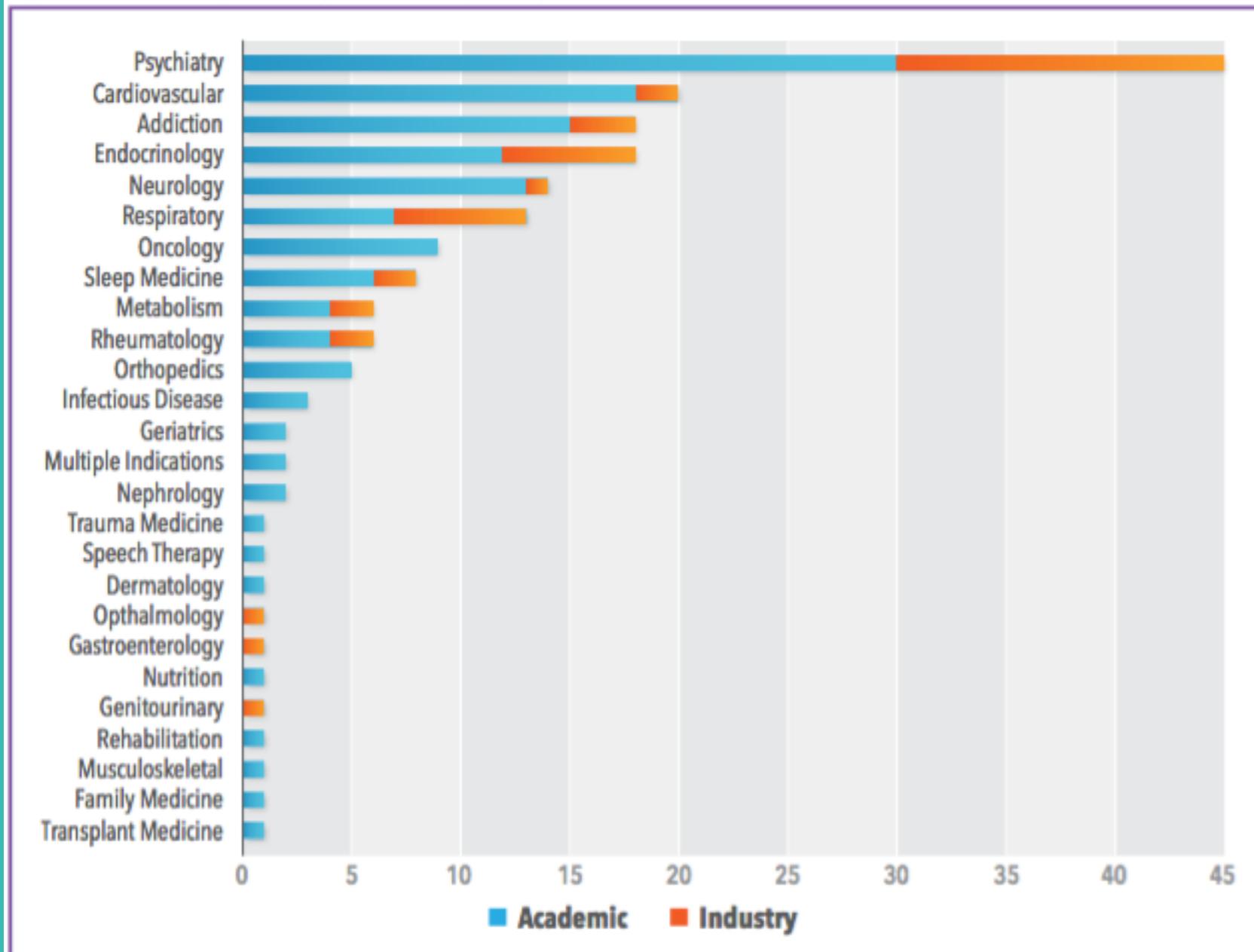
### **The new regulatory scheme for Software as a Medical Device approved by Anvisa**

*This Wednesday (23), the Brazilian Health Regulatory Agency (ANVISA) approved a Collegiate Board Resolution (RDC) which addresses the regularization of software as medical devices (the so called "SaMD").*

*The SaMDs, regulated by ANVISA as medical equipment, will continue to be regulated within the category of Medical Devices and through their general provisions, particularly the RDC n° 185/2001 and RDC n° 40/2015, reinforcing the supplementary character of this new regulation.*



Figure 2. Trends in Digital Therapeutics Trials by Therapeutic Area Over the Past Ten Years





# Novo Contexto

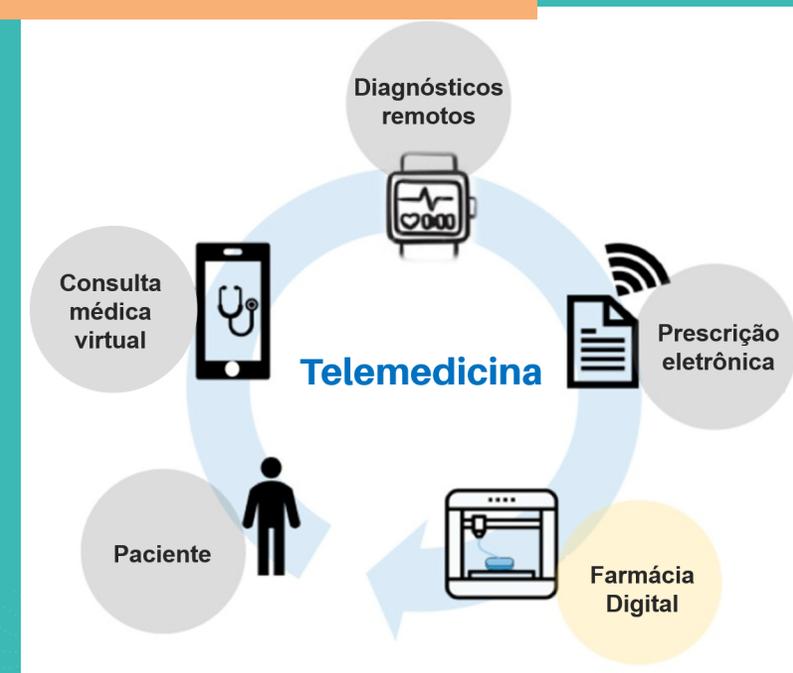
- **Wearable as a Medical Device**
  - Dispositivos com evidencia científica
- **Software as a Medical Device**
  - “Software” com evidência científica
- **Telessaúde**



# Novo Ciclo de Cuidado Digital

## Com evidência científica

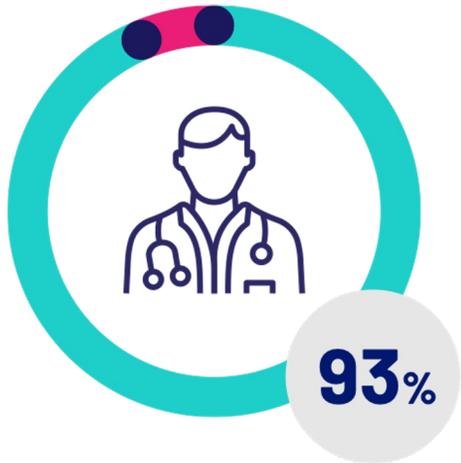
- Processo/Jornada Digitalizada
- Paciente Digitalizado
- Teleconsulta
- Diagnóstico Remoto ( Wearables as Medical Devices )
- **Prescrição Digital**
- Farmácia Digitalizada
- Terapia digital ( Softwares as a Medical Devices )



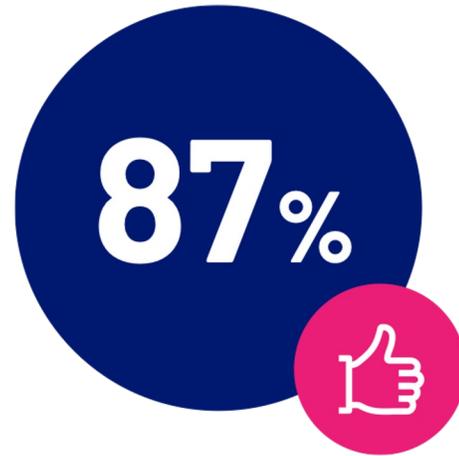
<https://pubmed.ncbi.nlm.nih.gov/30893842/>

# THE DIGITAL OPPORTUNITY

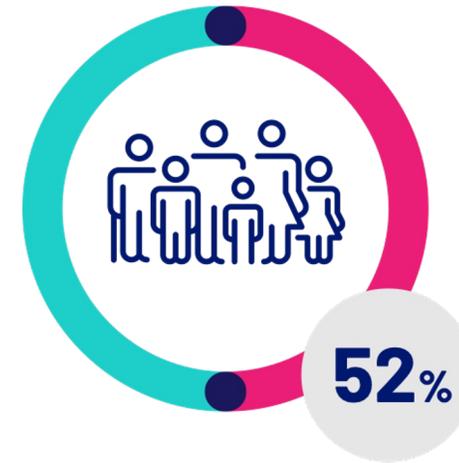
Health-focussed consumers have embraced digital health



93% of clinicians believing digital technologies can help.



87% of people who have used an app are satisfied with it.



52% of over-65s are willing to receive digital healthcare.



5 million people download a health app every day



1 & 4. <https://www.accenture.com/gb-en/insights/health/england-patient-survey>

2. <https://sensortower.com/blog/top-mental-wellness-apps-april-2020-downloads>

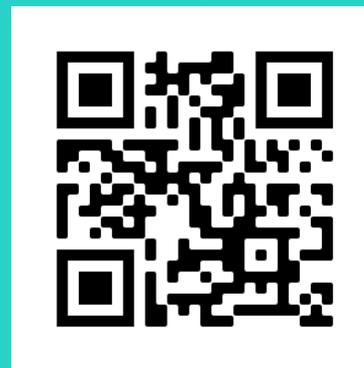
3. <https://www.healthcareitnews.com/news/emea/rise-digital-health-during-pandemic-energises-commitment-and-expectations-younger-doctors>

# THE DIGITAL HEALTH **RISK**

# 365,000

Digital health products  
to choose from.

*How do we know which ones are  
safe and effective?*



# Novo Ciclo de Cuidado Digital

## METAVERSO

Inovação

Jornada do Paciente

Inteligência Artificial

Realidade Virtual, Aumentada e Extendida



# Novo Ciclo de Cuidado Digital Cirúrgico no Metaverso

## Surgeons in the Metaverse

HTC DIUP Webinar #2

2022 / 11 / 10 THU

10:00-11:00 AM US ET

How Might We Navigate a Virtual World that is Still Taking Shape ?



*Moderator*

**Mr. Gil Bashe**

Global Chair Health and Purpose, FINN Partners; Top 10 Digital Health Influencer; Correspondent, Health Tech World



*Speaker*

**Rafael J. Grossmann Zamora, MD, FACS**

Surgeon, Educator, Speaker, Patient Advocate, Digital Health Innovator, Healthcare Futurist



*Speaker*

**James Skinovsky, MD, Ph.D**

Robotic Surgeon, Professor, Speaker, Doctor-Innovator Facilitator



*Speaker*

**Luísa Paganini, MD**

Orthopedic surgeon, Medical Auditor, Certified Doctor Innovator



*Speaker*

**Shawn Curtis Jones, MD, FACS**

Otolaryngologist, Author, Speaker, Consultant, Certified Doctor Innovator



*Speaker*

**Leonardo F. de Souza Aguiar, MD**

Surgeon, Futurist, Design / Exponential Thinker, Entrepreneur, Doctor-Innovator Facilitator



30 de outubro a  
01 de novembro - 2018

INTRODUTOR PLENÁRIA

BAGGIO manusa

VESCOM digicon

GDSUL

OS ESPAÇOS DE SAÚDE NOS CENÁRIOS DO AMANHÃ.  
Integrando Pessoas e Tecnologias no Ambiente Construído.



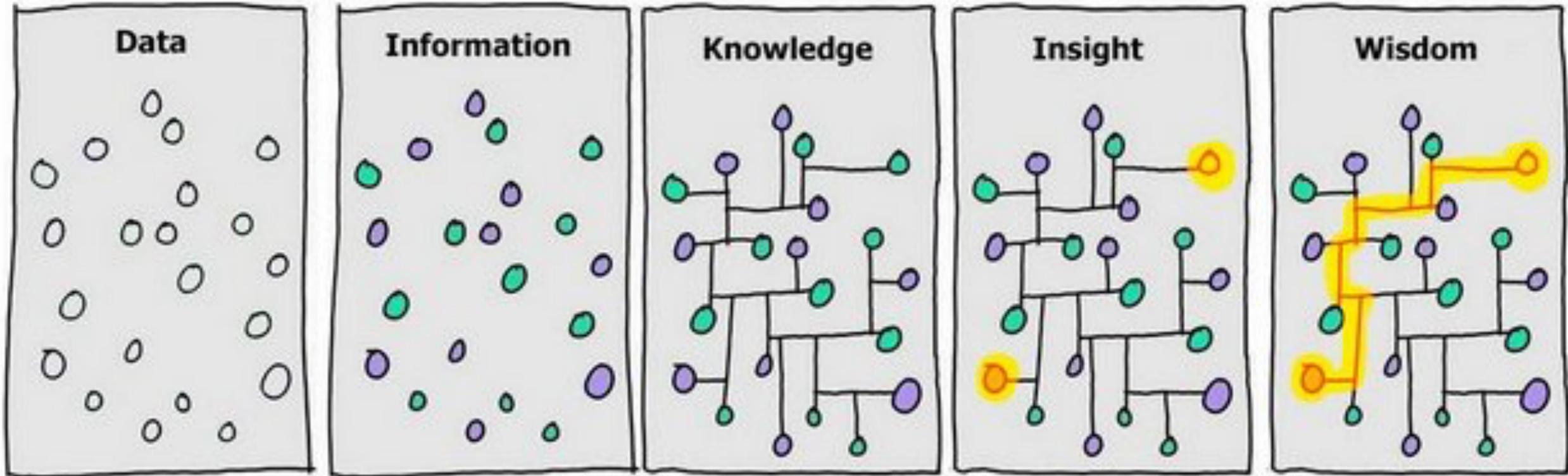
# VIII CBDEH

## CURITIBA-PR | 2018

### CONGRESSO BRASILEIRO PARA O DESENVOLVIMENTO DO EDIFÍCIO HOSPITALAR



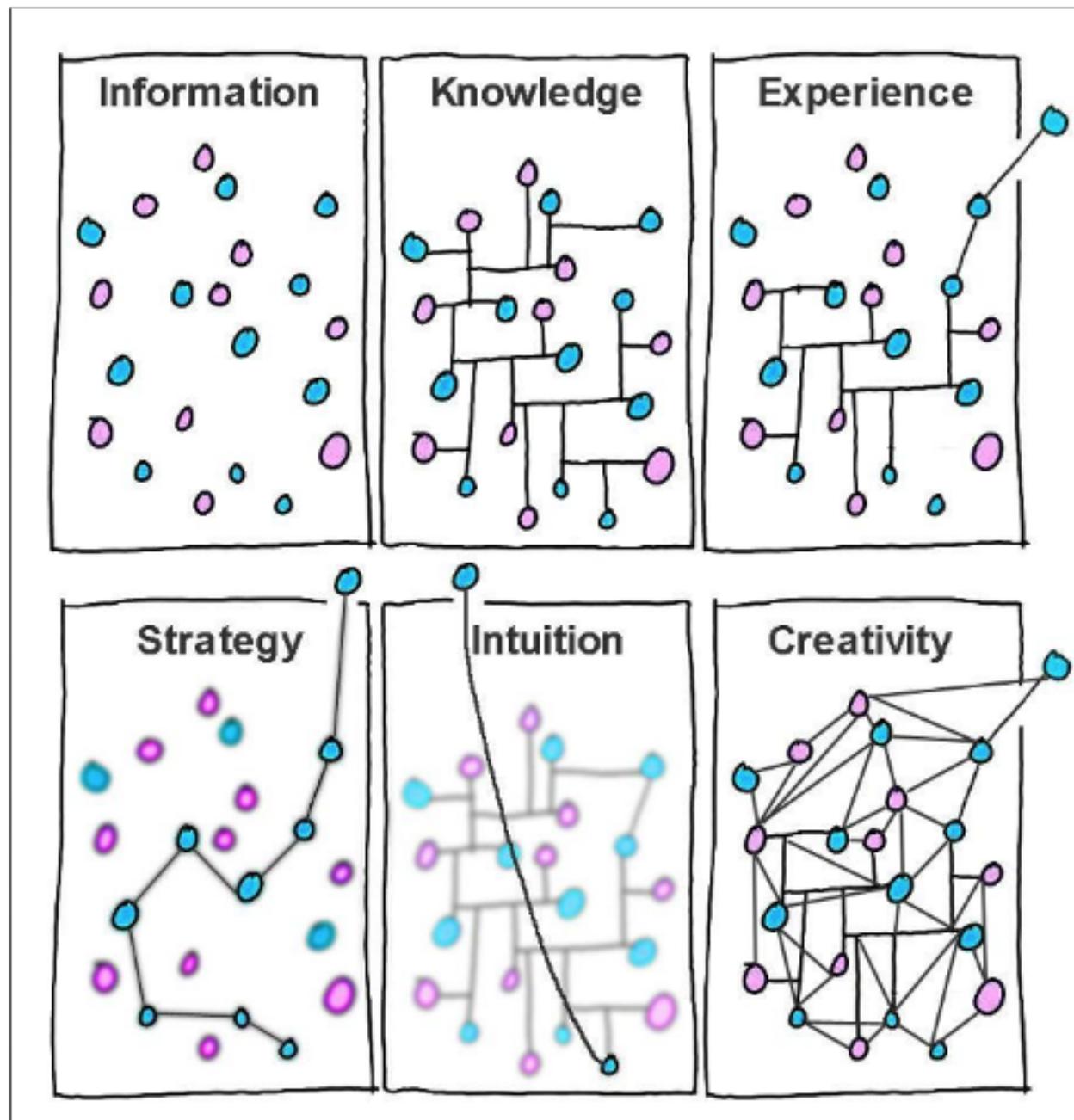
# PLURALIDADE E COLABORAÇÃO



# Alameda da Inovação



# INOVAÇÃO



A group of approximately 20 people are seated in a circle in a meeting room. They are surrounded by several tables covered with blue cloths, which are cluttered with colorful sticky notes and printed documents. The walls are also covered with large sheets of paper, each displaying various diagrams, charts, and sticky notes. The room has a blue carpet and recessed ceiling lights. A wooden door is visible in the background. The overall atmosphere is one of a collaborative workshop or meeting.

# Jornada da Inovação

# Memória do Futuro

**Bendito Cacao**  
**55%**  
TABLETE DE CHOCOLATE 55% DE SÓLIDOS DE CACAU  
Aromatizado artificialmente  
Peso Líq. 5g

**Vivências Pré-Congresso**  
**JORNADA DE INOVAÇÃO**

**“A melhor maneira de prever o futuro é cocriá-lo.”**  
Adaptado de Peter Drucker

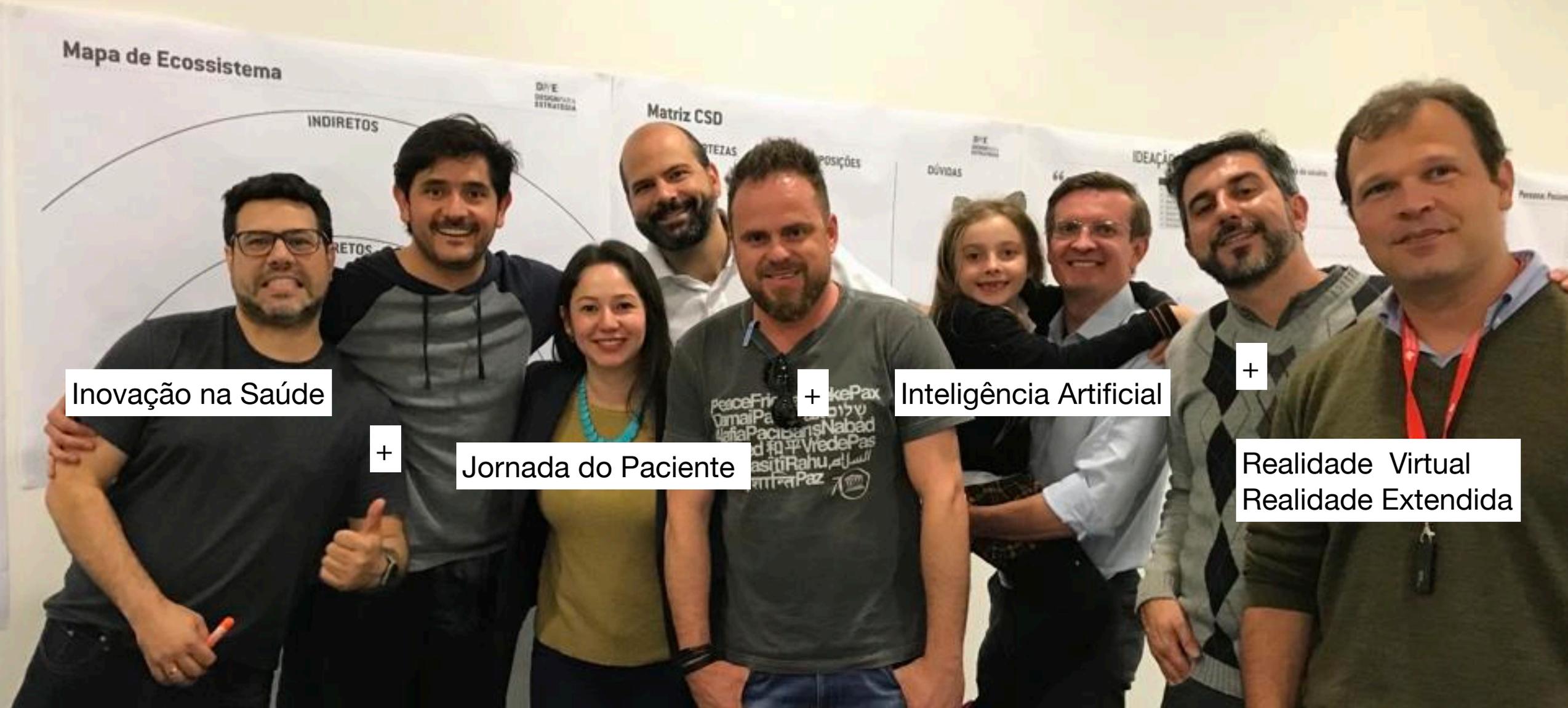
**VIII CBDEH**  
CURITIBA-PR | 2018  
CONGRESSO BRASILEIRO PARA O DESENVOLVIMENTO DO EDIFÍCIO HOSPITALAR  
OS ESPAÇOS DE SAÚDE NOS CENÁRIOS DO AMANHÃ  
Integração Humana e Tecnológica no Ambiente Construído  
30 Out a 01 Nov / 2018

**Realização:**

**Patrocínio:**

**Apoio:**

# 2018 CBDEH-Curitiba



Inovação na Saúde

+

Jornada do Paciente

+

Inteligência Artificial

+

Realidade Virtual  
Realidade Extendida

# 2018 CBDEH-Curitiba

## Primeiro Evento Brasileiro

Inovação na Saúde

+

Jornada do Paciente

+

Inteligência Artificial

+

Realidade Virtual  
Realidade Extendida

# METAVERSO NA SAÚDE



VOCÊS

Representam Liderança



# Liderança em tempos Complexos

<http://ijhpm.com>

Int J Health Policy Manag 2018, 7(12), 1073–1084

doi 10.15171/ijhpm.2018.75

**IJHPM**

International Journal of Health Policy and Management

Scoping Review



## Complex Leadership in Healthcare: A Scoping Review

Zakaria Belrhiti<sup>1,2,3\*</sup>, Ariadna Nebot Giralt<sup>2</sup>, Bruno Marchal<sup>2</sup>





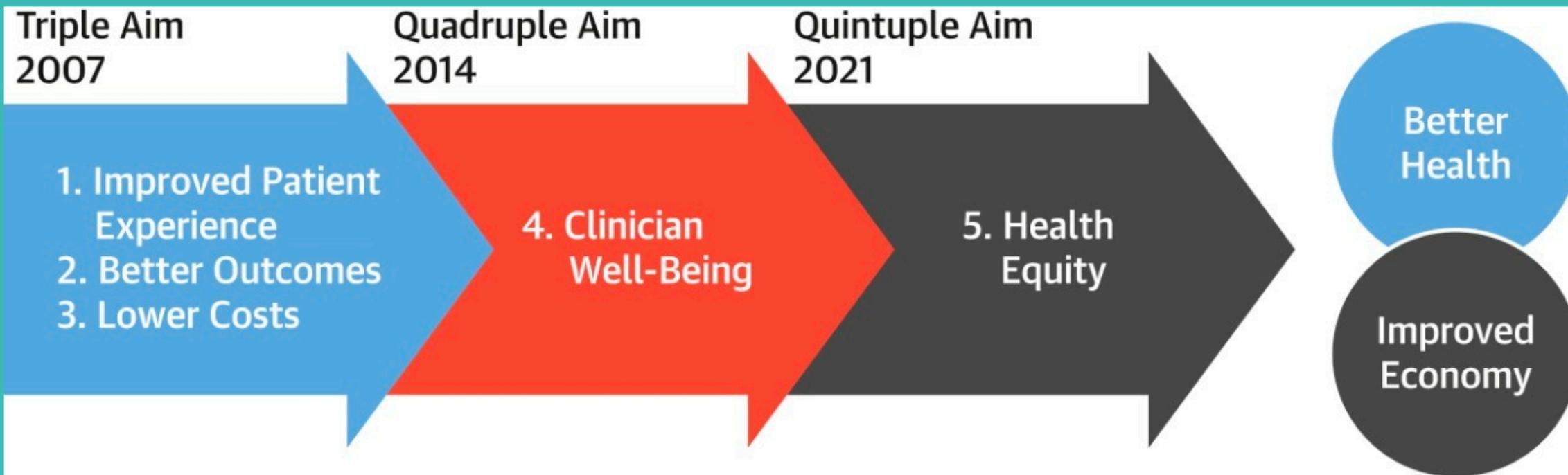
January 21, 2022

# The Quintuple Aim for Health Care Improvement A New Imperative to Advance Health Equity

Shantanu Nundy, MD, MBA<sup>1,2</sup>; Lisa A. Cooper, MD, MPH<sup>3,4</sup>; Kedar S. Mate, MD<sup>5,6</sup>

» [Author Affiliations](#)

JAMA. 2022;327(6):521-522. doi:10.1001/jama.2021.25181





# IX CBDEH

## CONGRESSO BRASILEIRO PARA O DESENVOLVIMENTO DO EDIFÍCIO HOSPITALAR

CONEXÃO E DIVERSIDADE NOS ESPAÇOS DE SAÚDE  
19 A 21 DE OUTUBRO DE 2022 - RECIFE/PE

Triple Aim  
2007

1. Improved Patient Experience
2. Better Outcomes
3. Lower Costs

Quadruple Aim  
2014

4. Clinician Well-Being

Quintuple Aim  
2021

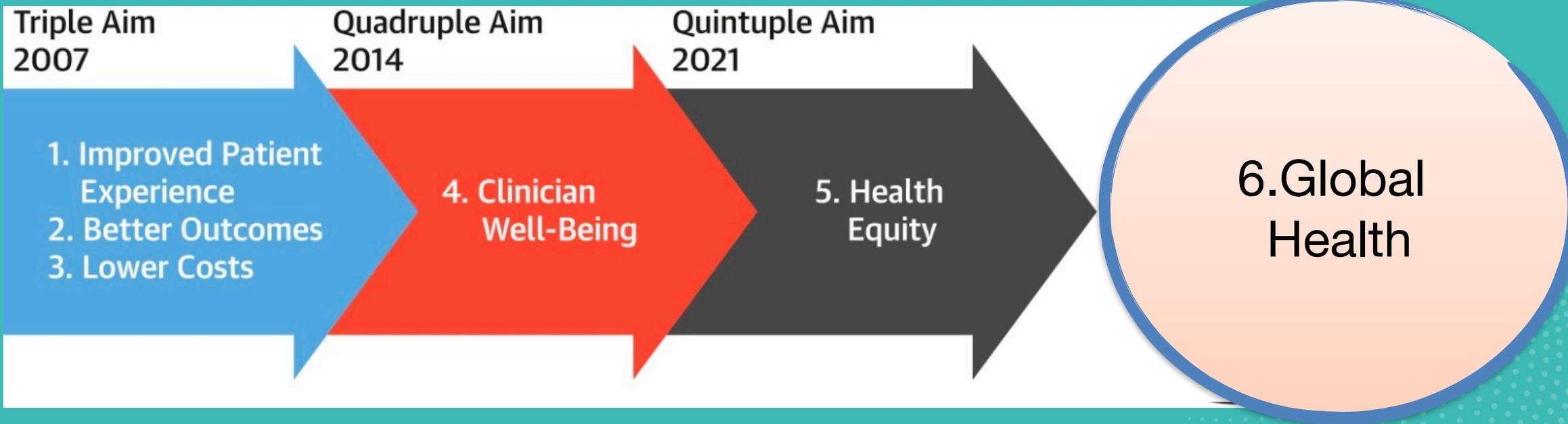
5. Health Equity

Better Health

Improved Economy



# Sextuple Aim





# Tratado da Pandemia

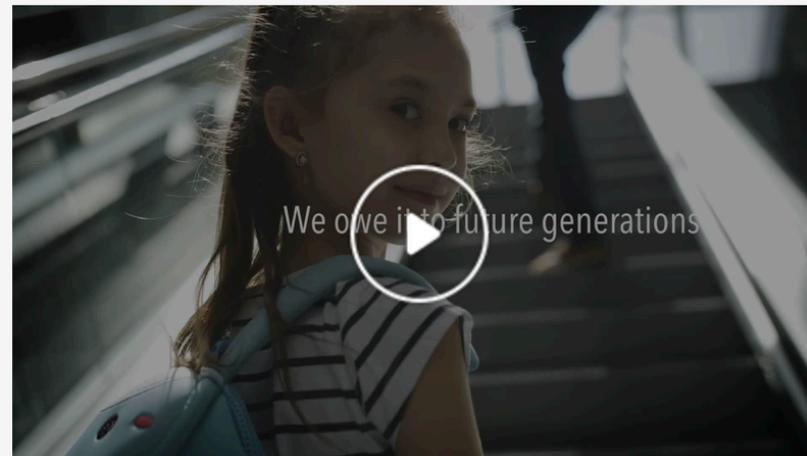
## Assembleia Mundial da Saúde decide dar início às negociações de um acordo para combater as pandemias

Em 1 de dezembro de 2021, os 194 membros da Organização Mundial da Saúde (OMS) chegaram a um consenso para **dar início ao processo de elaboração e negociação de uma convenção, acordo ou outro instrumento internacional**, no âmbito da Constituição da Organização Mundial da Saúde, para reforçar a prevenção, preparação e resposta a pandemias.

Será agora constituído um organismo intergovernamental de negociação, que realizará a sua primeira reunião até 1 de março de 2022 (para chegar a acordo sobre métodos de

trabalho). Seguir-se-á a apresentação de um relatório intercalar à 76.ª Assembleia Mundial da Saúde, que terá lugar em 2023, com o objetivo de adotar o instrumento até 2024.

› Conselho dá luz verde ao início das negociações relativas a um tratado internacional sobre pandemias

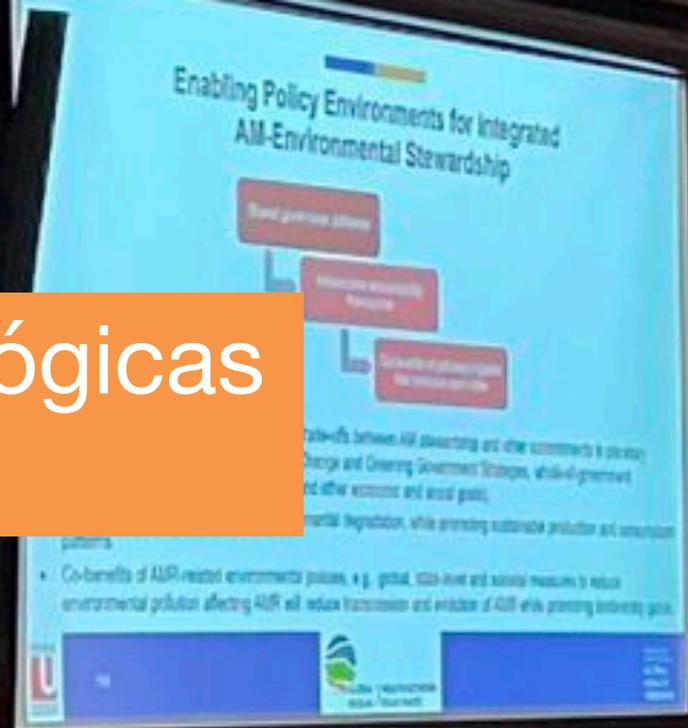


Face a uma pandemia, somos todos vulneráveis.



# Urban Political Ecology of AMR

## Conexões Urbanas Políticas Ecológicas das Bactérias Multiresistentes



University of Copenhagen

CeBIL - Centre for Advanced Studies in Biomedical Innovation Law





# Governança

## Enhancing Governance of Antimicrobial Stewardship



### UPE Scholarship, AMR Research, One Health Governance responses

**Problematizing societal relations with nature** by focusing on addressing health inequities and environmental injustices accelerating AMR suggests

- Need to address detrimental impacts of human activity/urbanization;
- Need to review human and more than human relationalities in relation to use of land, air, sea and freshwater.

**Rescaling socio-ecological arrangements** by integrating AMR governance responses within broader environmental governance responses through

- Eco-scalar fix: situate health inequities and environmental injustices related to AMR within broader environmental concerns, as they related to climate change and environmental degradation.



## Integrating Antimicrobial and Environmental Stewardship Through an Urban Political Ecology Lens

— Raphael Aguiar

PhD candidate, Faculty of Health, York University  
Dahdaleh Global Health Graduate Scholar 2022-2023

Date: Wednesday, October 26, 2022  
Time: 1-2 p.m. EDT  
Location: Hybrid

Register: [www.yorku.ca/dighr/events/](http://www.yorku.ca/dighr/events/)



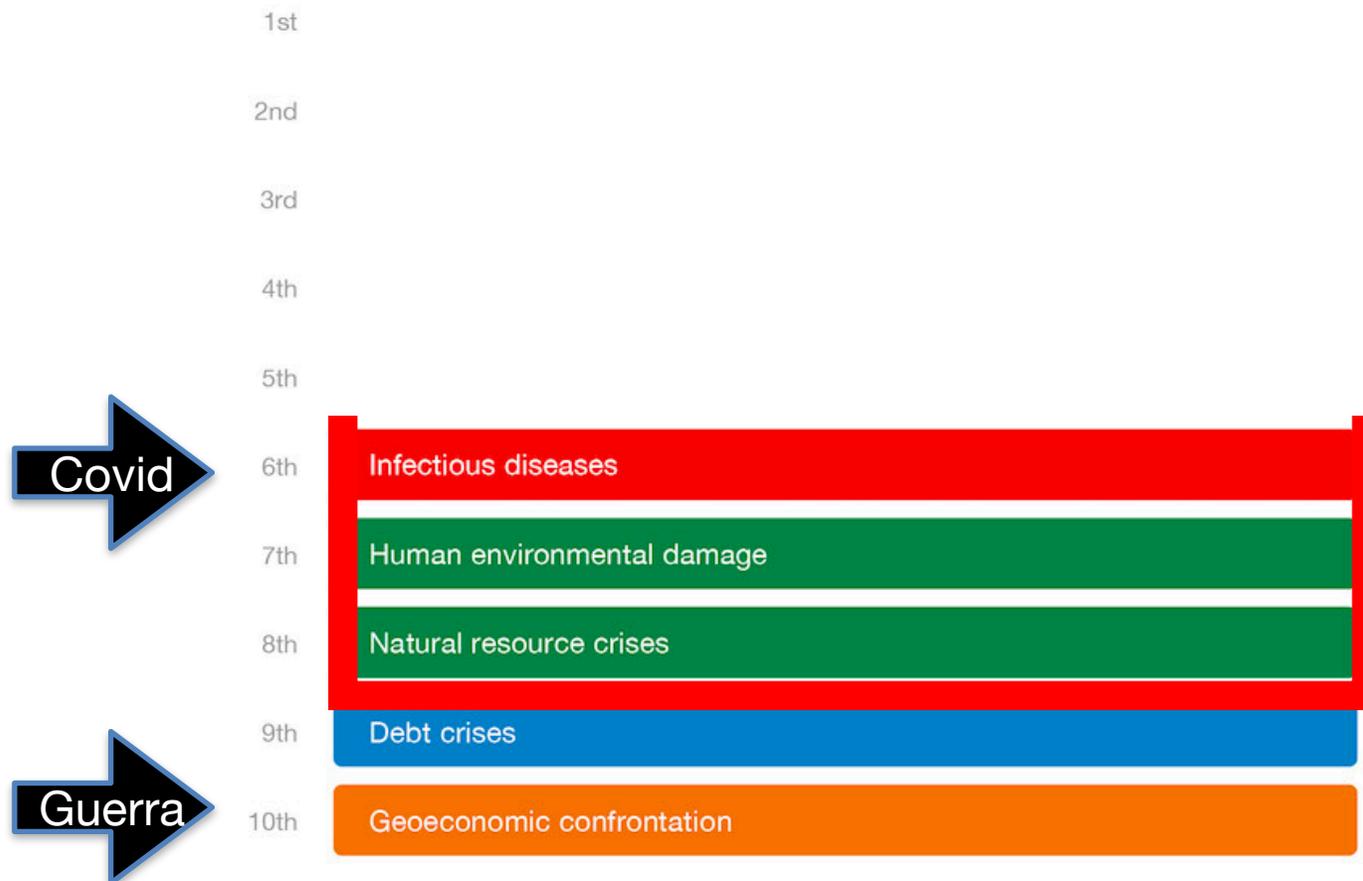
**DAHDALEH  
INSTITUTE  
SEMINAR SERIES**  
— 2022-2023





# Top 10 Global Risks by Severity

Over the next 10 years



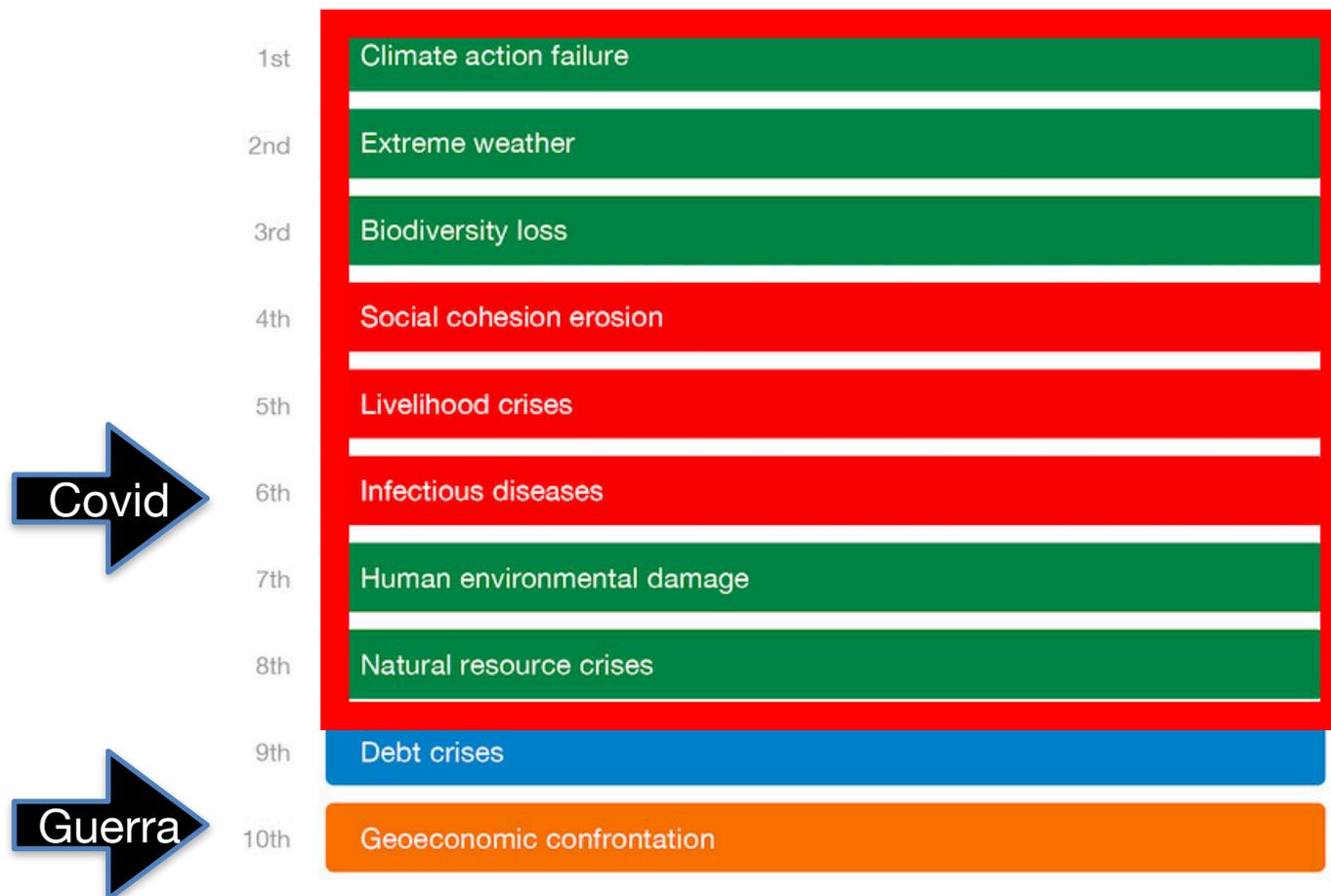
■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological





# Top 10 Global Risks by Severity

Over the next 10 years



■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological



# CLIMATE CHANGE

A large, dark, stormy wave is crashing over a city. The wave is massive and turbulent, with white foam at the top. The city buildings are visible in the foreground, partially obscured by the base of the wave. The sky is dark and stormy. A large speech bubble points from the text 'CLIMATE CHANGE' down towards the wave.

Healthcare!

Guns!

Justice!

Immigration!

Free school!

Legal weed!

## NEW RESEARCH IN

Physical Sciences

Social Sciences

Biological Sciences

# Climate-driven introduction of the Black Death and successive plague reintroductions into Europe

[Article Alerts](#)[Share](#)[Email Article](#)[Tweet](#)[Citation Tools](#)[Curtir 0](#)[Request Permissions](#)[Mendeley](#)

Boris V. Schmid, Ulf Büntgen, W. Ryan Easterday, Christian Ginzler, Lars Walløe, Barbara Bramanti, and Nils Chr. Stenseth

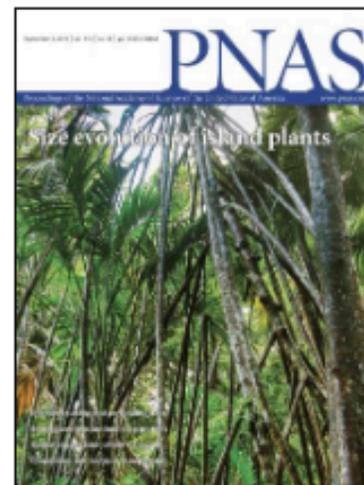
PNAS March 10, 2015 112 (10) 3020-3025; first published February 23, 2015 <https://doi.org/10.1073/pnas.1412887112>

Edited by Kenneth W. Wachter, University of California, Berkeley, CA, and approved January 28, 2015 (received for review July 9, 2014)

[Article](#)[Figures & SI](#)[Info & Metrics](#)[PDF](#)

## Significance

The second plague pandemic in medieval Europe started with the Black Death epidemic

[Current Issue](#)[Submit](#)

# A Mysterious Infection, Spanning the Globe in a Climate of Secrecy

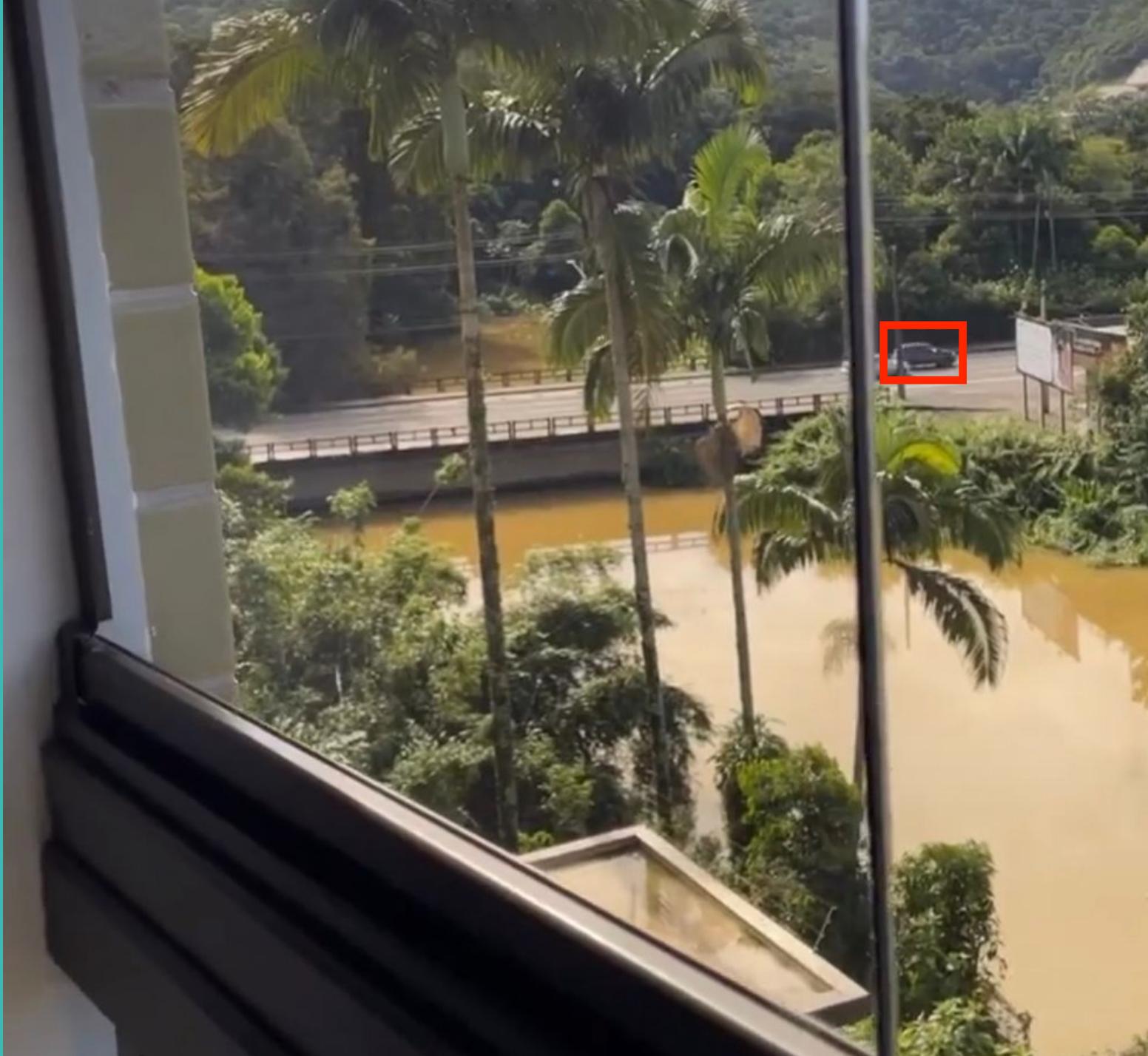
The rise of Candida auris embodies a serious and growing public health threat: drug-resistant germs.

By Matt Richtel and Andrew Jacobs  
April 6, 2019



<https://www.nytimes.com/2019/04/06/health/drug-resistant-candida-auris.html>







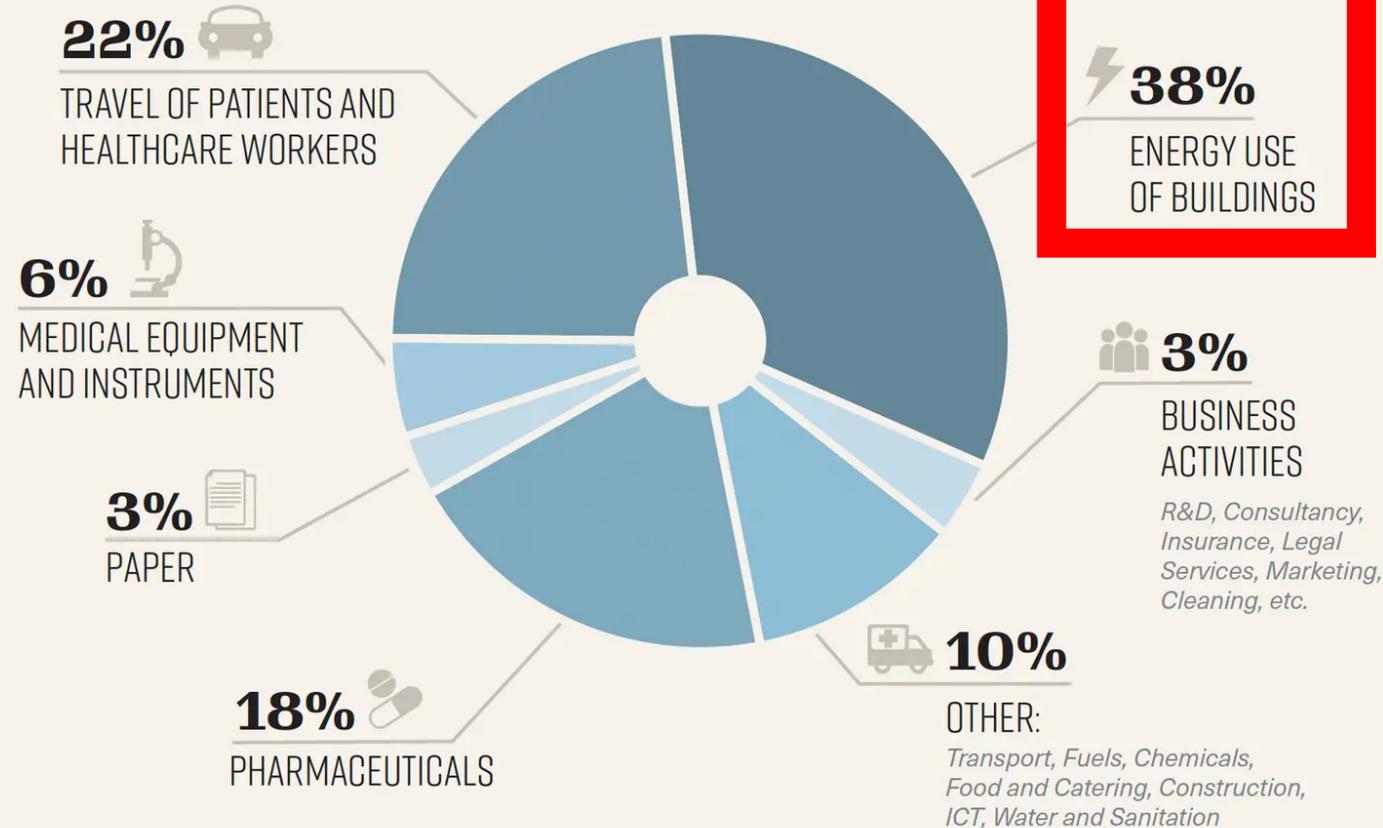
# Ophthalmology and the climate crisis: Time to take responsibility

March 3, 2022

Dr Redmer van Leeuwen, Dr Sjoerd Elferink

Ophthalmology Times Europe, Ophthalmology Times Europe March 2022, Volume 18, Issue 02

**FIGURE 2.** Proportion of the total carbon footprint of the Dutch healthcare sector.  
[Percentage; 100% = 11 Megaton CO<sub>2</sub>]





**FIGURE 3.** Comparison of the volume of waste produced by one phaco in the USA (hospital anonymous) and 93 phacos in Aravind hospital, India.

*(Image courtesy of Cassandra Thiel, assistant professor at NYU Langone Health)*



**1 phaco (USA)**





**FIGURE 3.** Comparison of the volume of waste produced by one phaco in the USA (hospital anonymous) and 93 phacos in Aravind hospital, India.

*(Image courtesy of Cassandra Thiel, assistant professor at NYU Langone Health)*



**1 phaco (USA)**



**93 phacos (Aravind, India)**





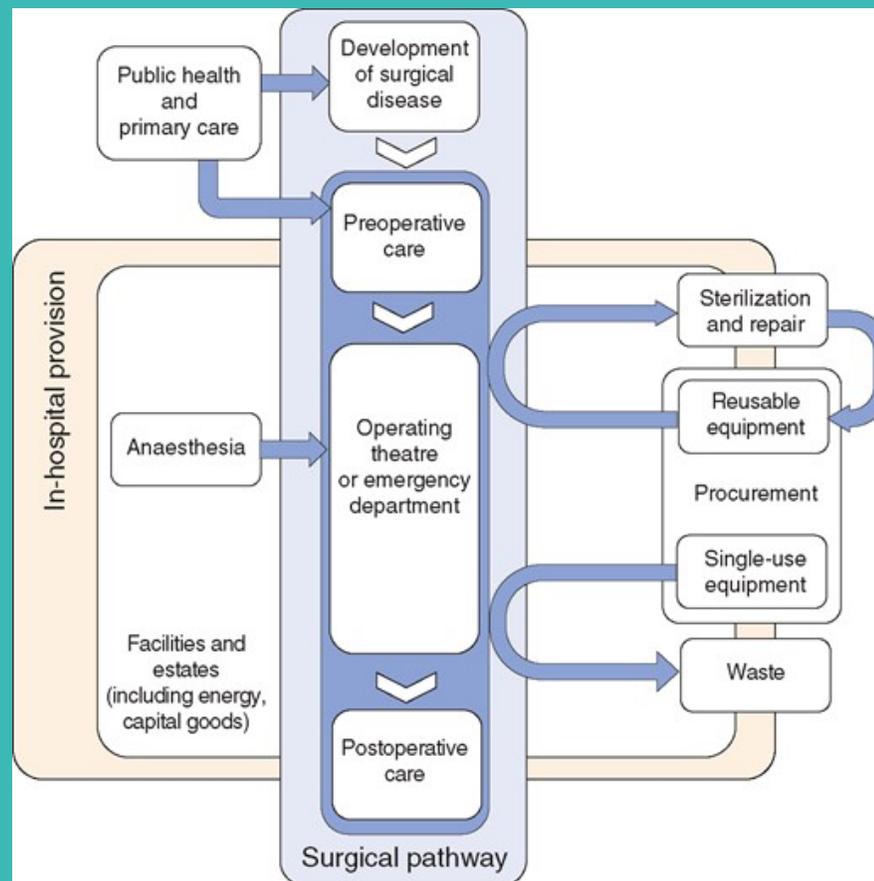
## Strategy for net-zero carbon surgery <sup>FREE</sup>

C Rizan ✉, M F Bhutta

*British Journal of Surgery*, Volume 108, Issue 7, July 2021, Pages 737–739,

<https://doi.org/10.1093/bjs/znab130>

**Published:** 08 May 2021 **Article history** ▼



# These surgeons have performed the first 'net-zero' cancer operation

By [Lottie Limb](#) • 26/05/2022



Mr Aneel Bhangu, consultant colorectal surgeon at the hospital where the first 'net-zero' operation was performed. - Copyright [UHB NHS Foundation Trust](#)

The world's first 'net-zero' operation has been performed in the UK, paving the way for more sustainable practices in healthcare.





# Complex Leadership

<http://ijhpm.com>

Int J Health Policy Manag 2018, 7(12), 1073–1084

doi 10.15171/ijhpm.2018.75

**IJHPM**

International Journal of Health Policy and Management

Scoping Review



## Complex Leadership in Healthcare: A Scoping Review

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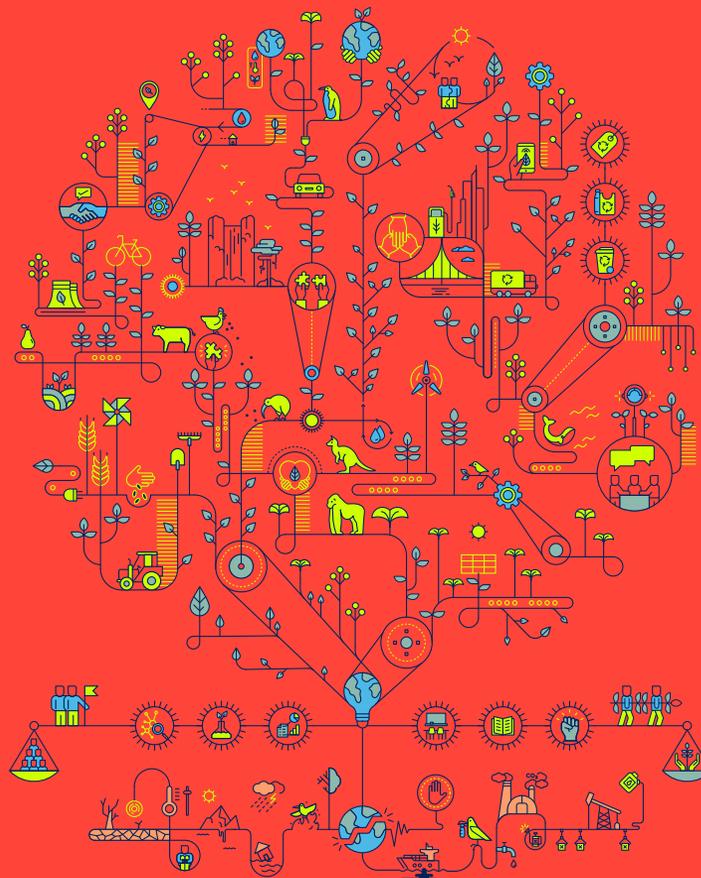
CrossMark  
click for updates

# Liderança Complexa





Relatório do Desenvolvimento Humano 2020  
**A próxima fronteira**  
O desenvolvimento humano e o Antropoceno



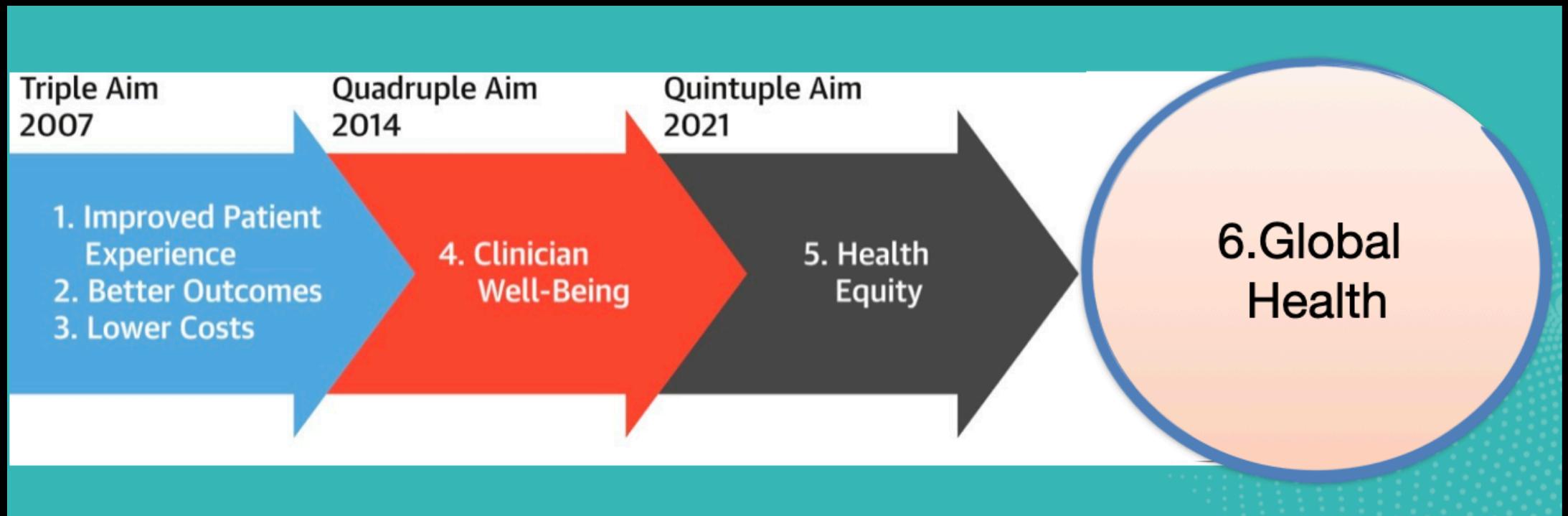
# Projeto Primeira cirurgia Carbono zero no Brasil !!!

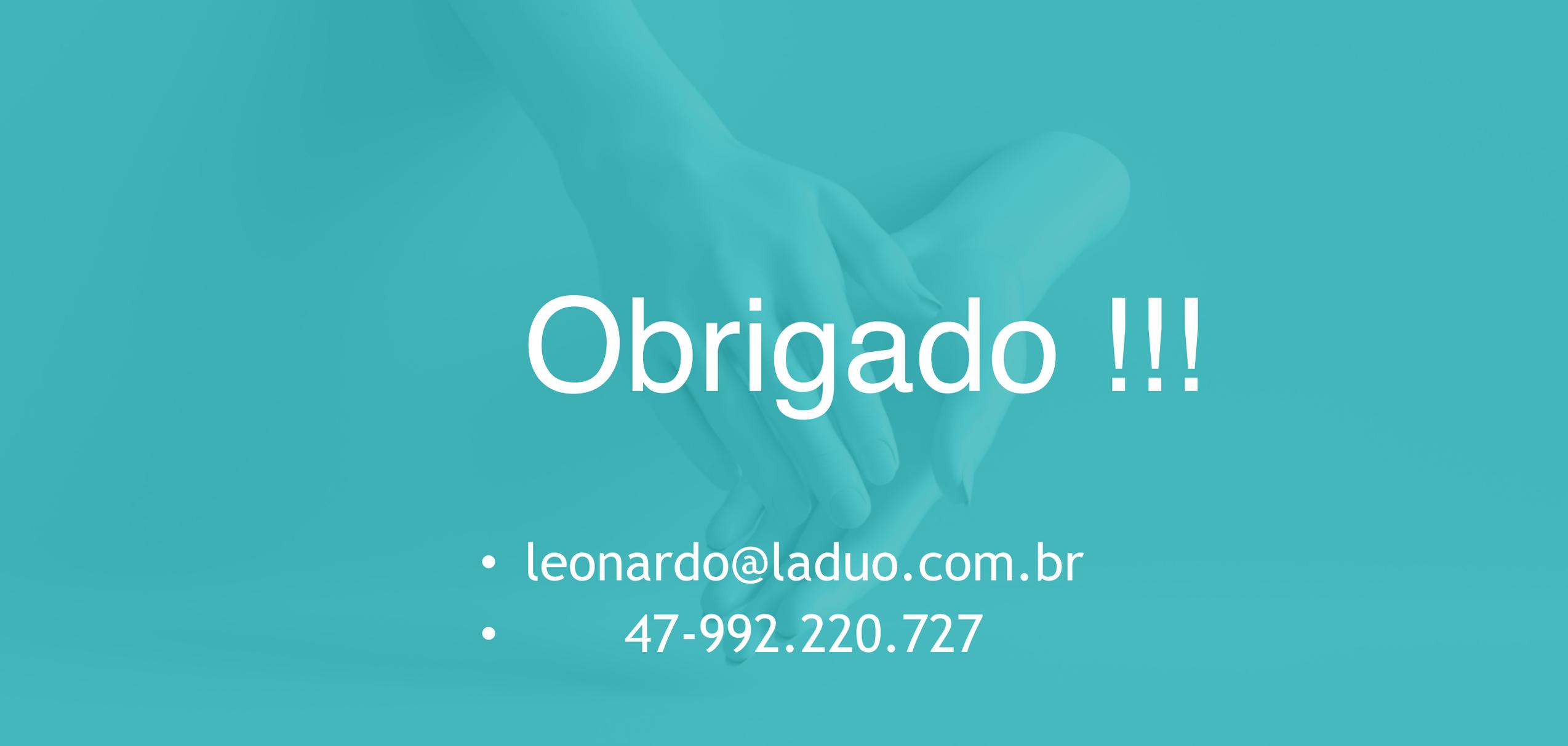


Quer participar desse projeto ?

WhatsApp:  
47-992.220.727

# Qual o legado da ABDEH ?





# Obrigado !!!

- [leonardo@laduo.com.br](mailto:leonardo@laduo.com.br)
- 47-992.220.727