

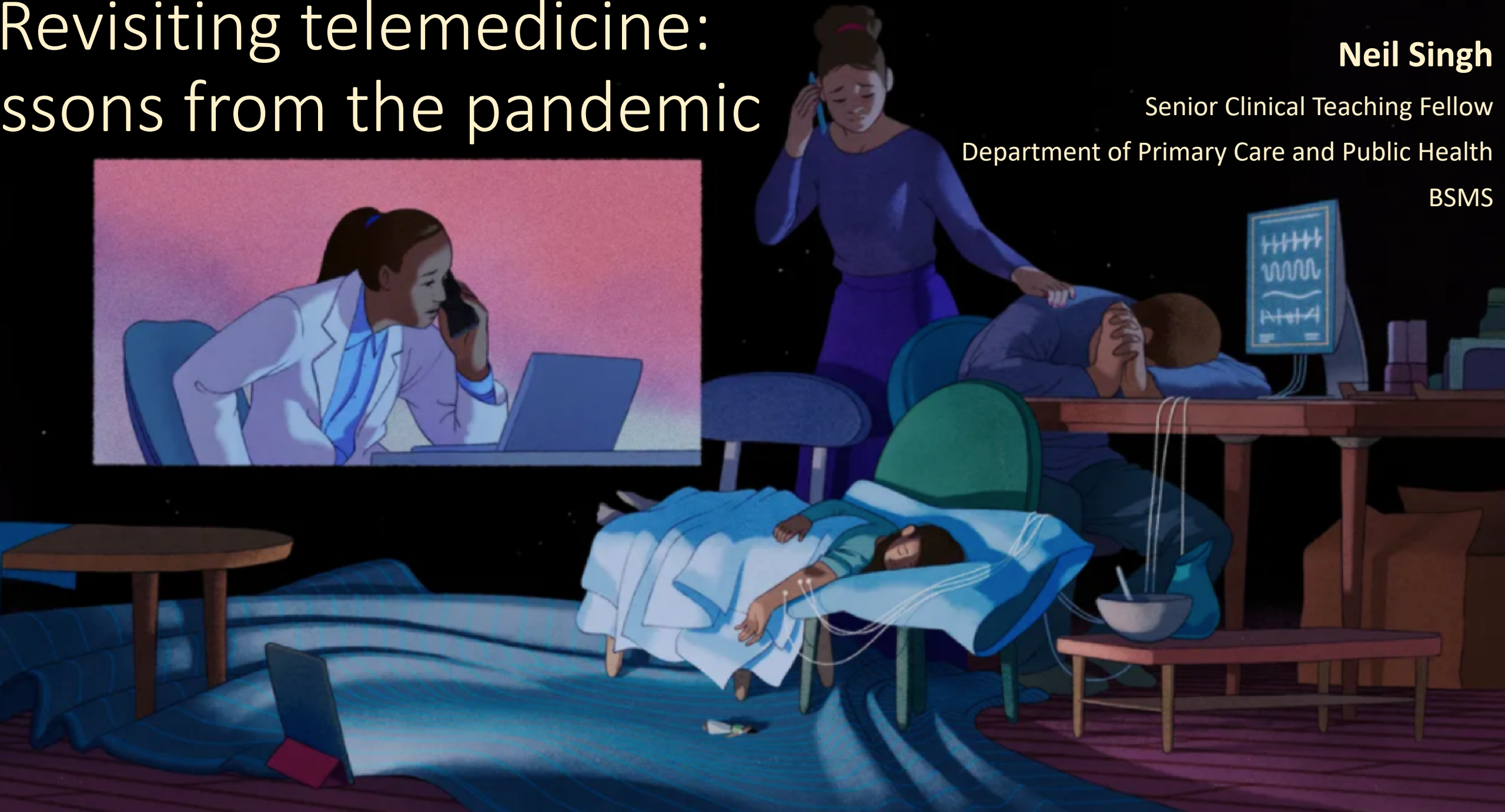
# Revisiting telemedicine: Lessons from the pandemic

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Senior Clinical Teaching Fellow

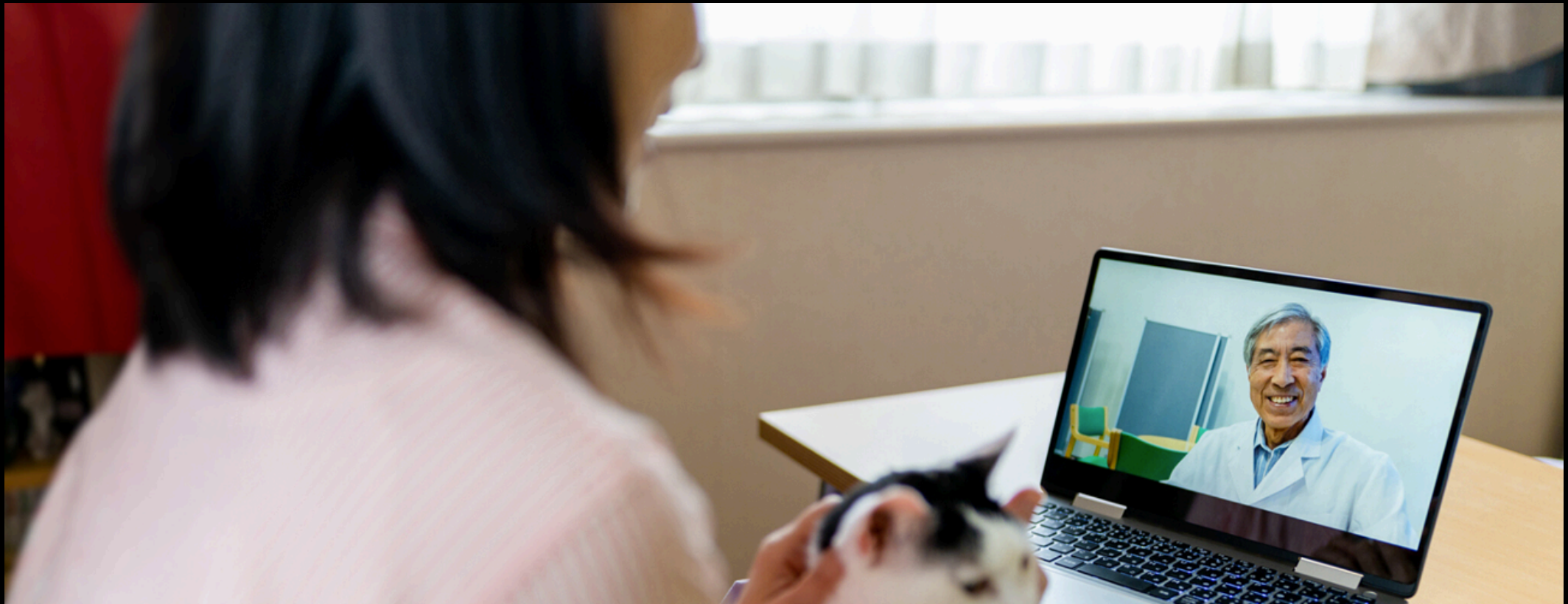
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BSMS



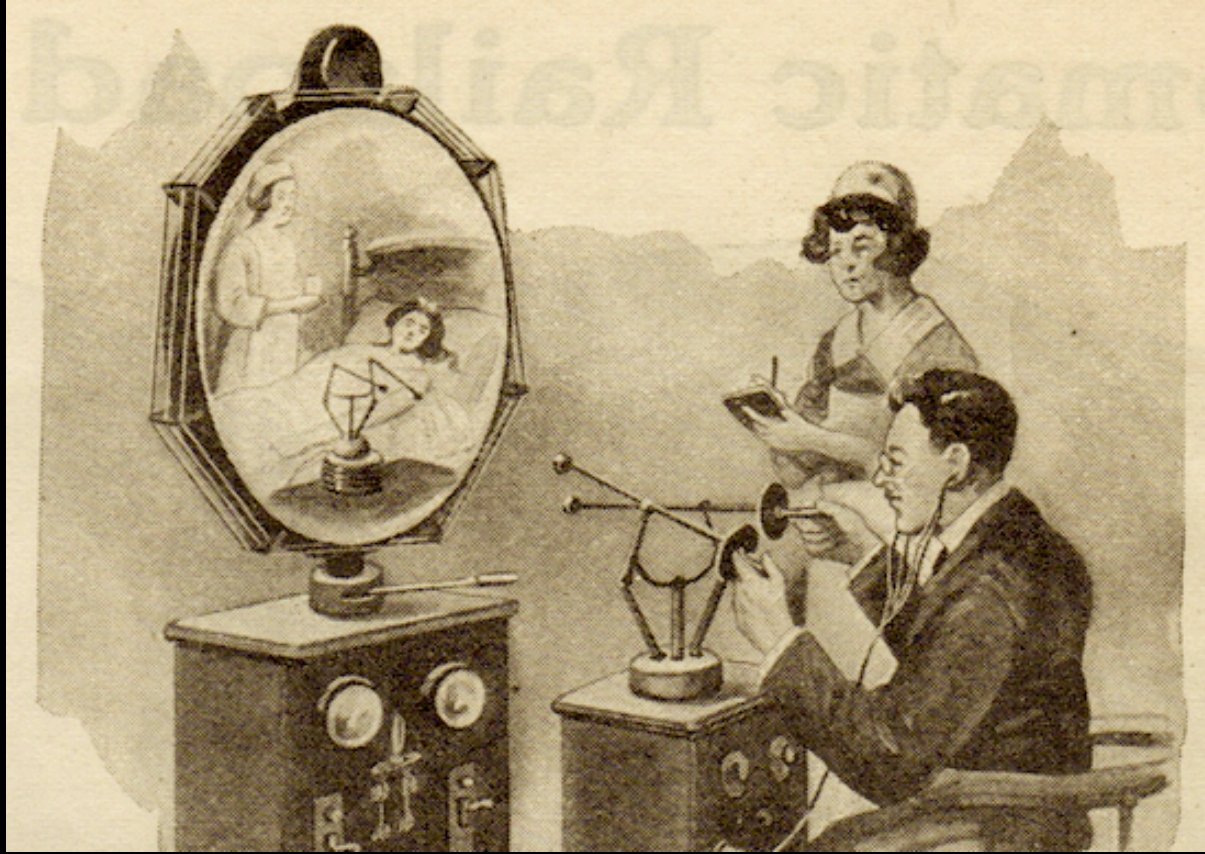
# What is Telemedicine?

*“an integrated system of healthcare delivery that employs telecommunications and computer technology as a substitute for face-to-face contact between provider and client”.*

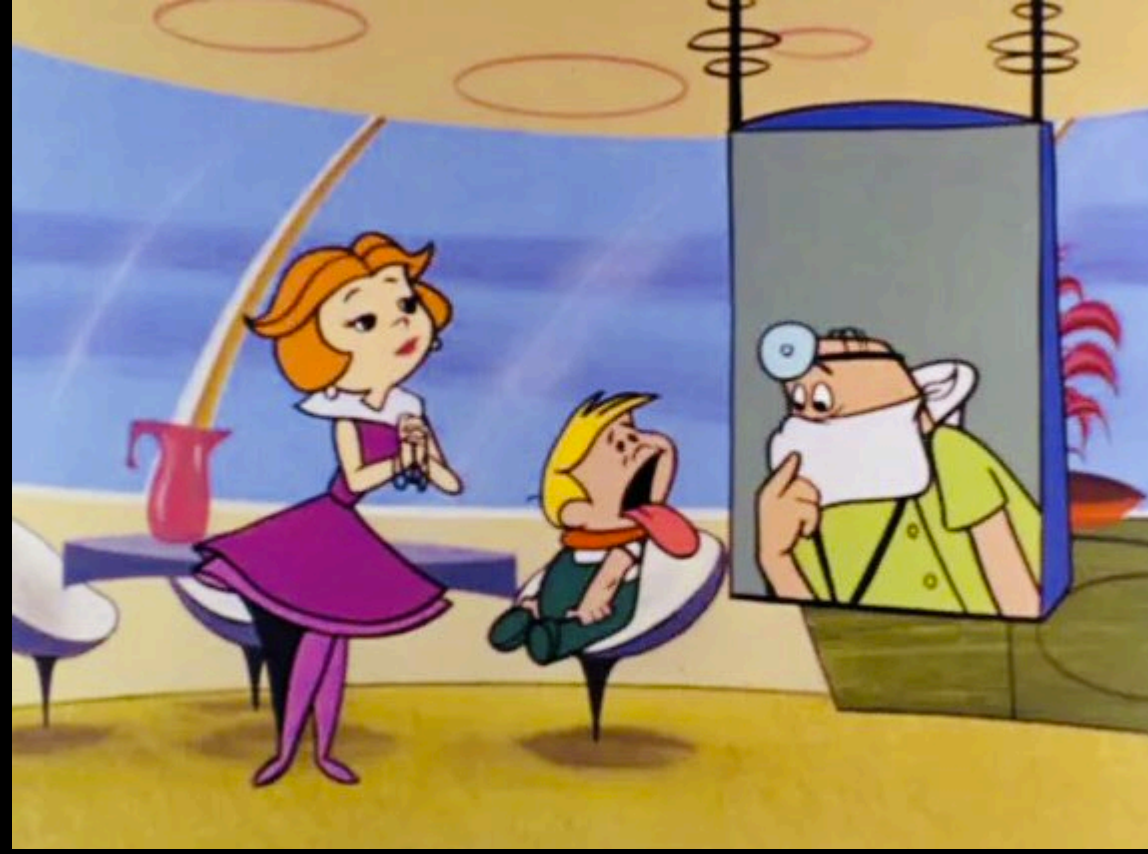




1925: Dr Hugo Gernsback: Teledactyl



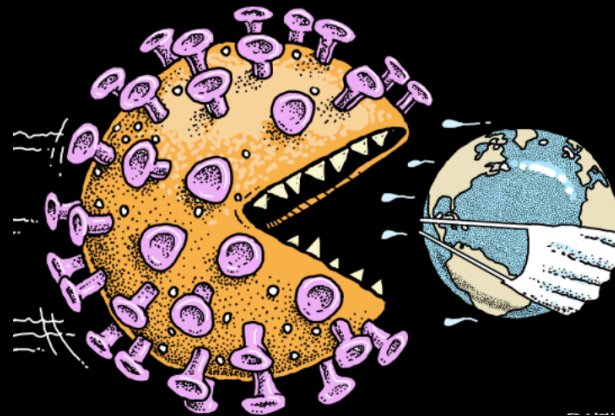
1962: The Jetsons



## A reluctant revolution



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How will telemedicine  
change medical care?



# History



accuRx.

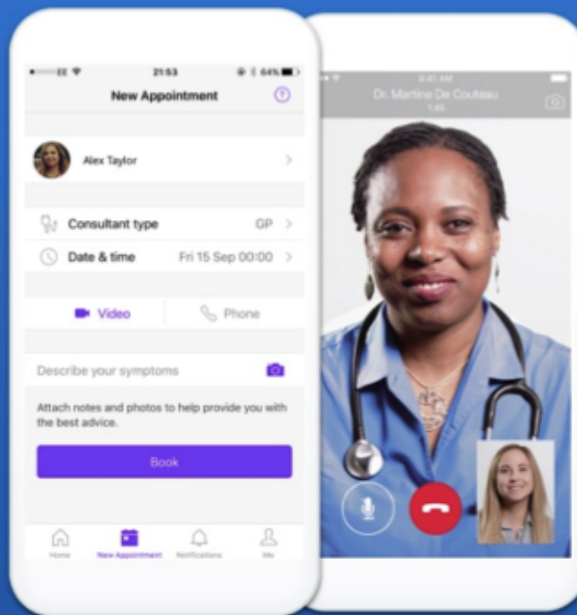


## Book an appointment in seconds

You can make an appointment at anytime of day or night, directly from your mobile.

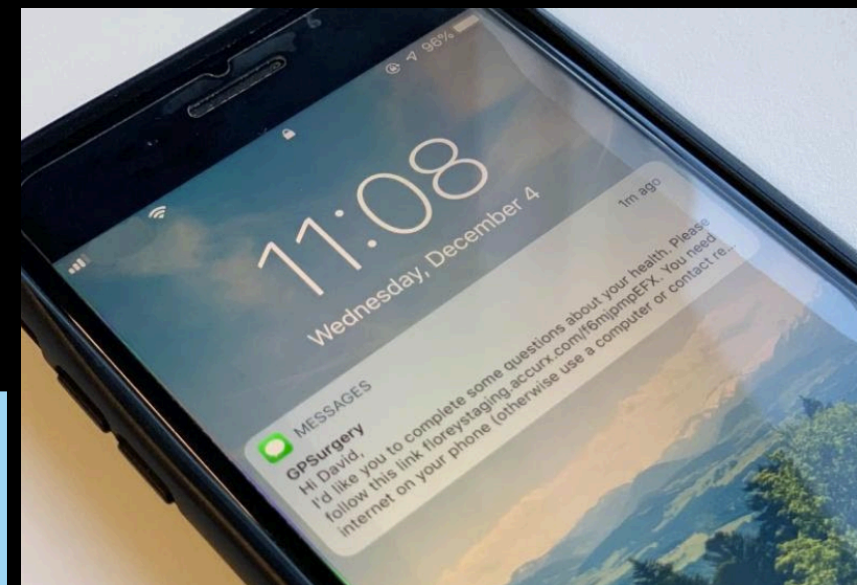
## See a doctor in minutes

Doctors are available 24/7 and most of the time you'll be able to get a video consultation on your phone within 2 hours.



livi

econsult





Examination

# Smartphone Examinations: ResApp



A new app uses machine learning to analyse coughs to predict diagnoses

Australian researchers conducted a prospective, multi-centre study to compare the app's diagnoses to those of trained physicians.

After analysing over 500 subjects, the researchers found the smartphone app to be 81-97% accurate in detecting asthma, pneumonia, bronchiolitis, croup, and lower respiratory tract infections.



Observations

# Wireless remote monitoring: the RAPID Index

Over 3 years, Duncan's team monitored more than 7 million minutes of data from 982 patients at Birmingham Children's Hospital PICU

Twenty-nine of those children had significant deterioration, and the RAPID Index identified the declines an average of 52 hours earlier than existing methods. It also picked up 20% more significant problems.



## Real-time or streamed data

T21 child with pulmonary hypertension



First warning at 5.26  
Wakes up at 6.26

Unplanned extubation at 7.06

Not visible with bedside monitoring but could we predict this in future?







Treatment



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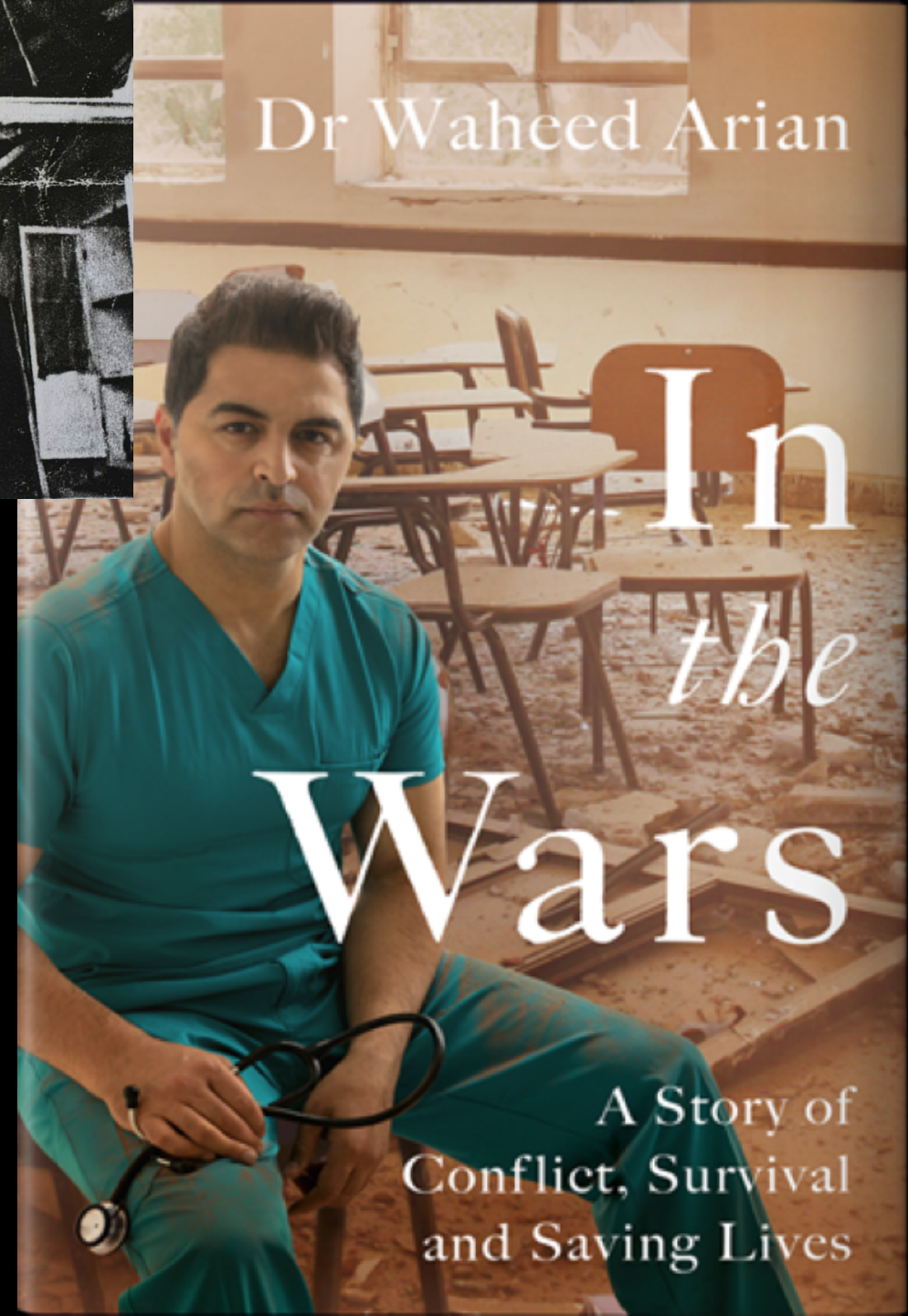
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Our volunteer doctors use everyday technology to save lives in war zones and low resource countries.



Dr Waheed Arian



# In *the* Wars

A Story of  
Conflict, Survival  
and Saving Lives



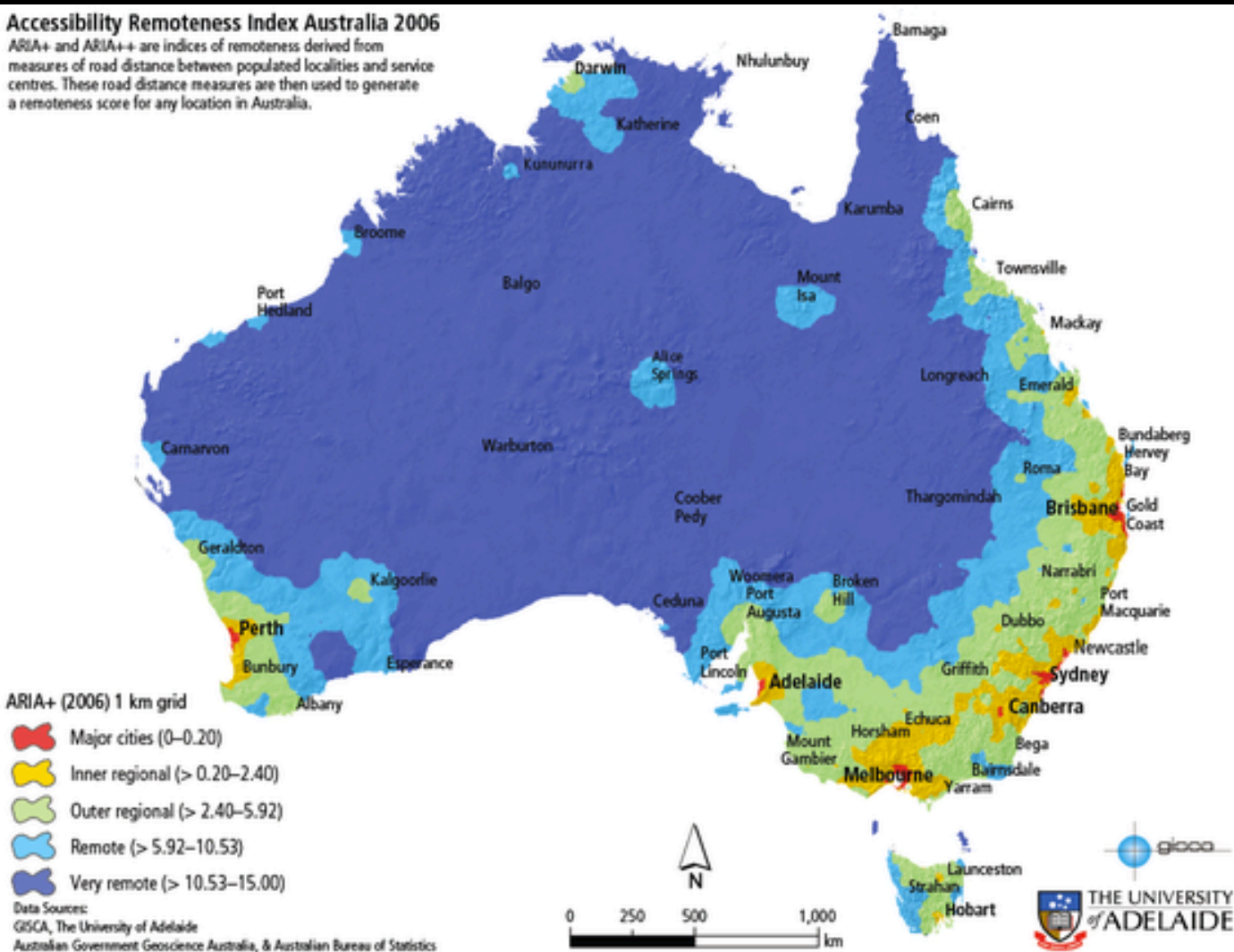


Will telemedicine narrow or  
widen health disparities?

# Earlier diagnosis and intervention for “hard to reach”

## Accessibility Remoteness Index Australia 2006

ARIA+ and ARIA++ are indices of remoteness derived from measures of road distance between populated localities and service centres. These road distance measures are then used to generate a remoteness score for any location in Australia.



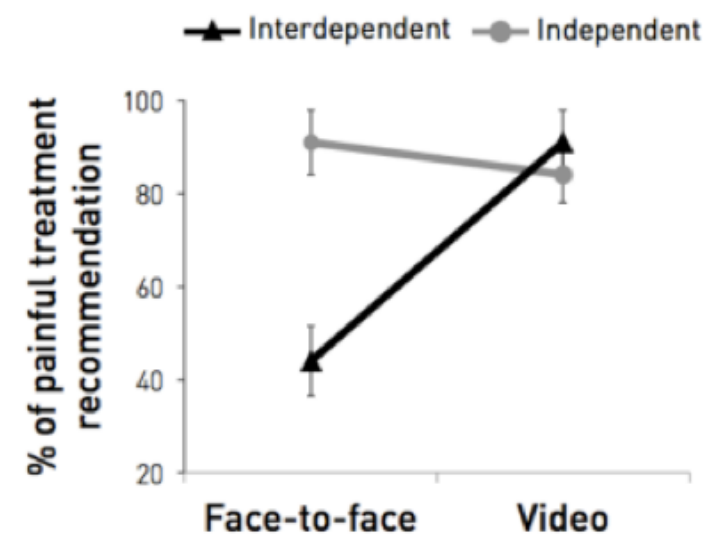
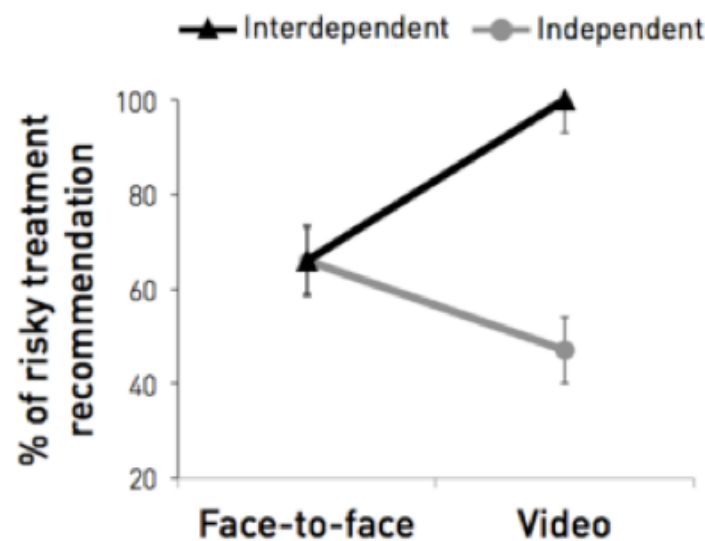
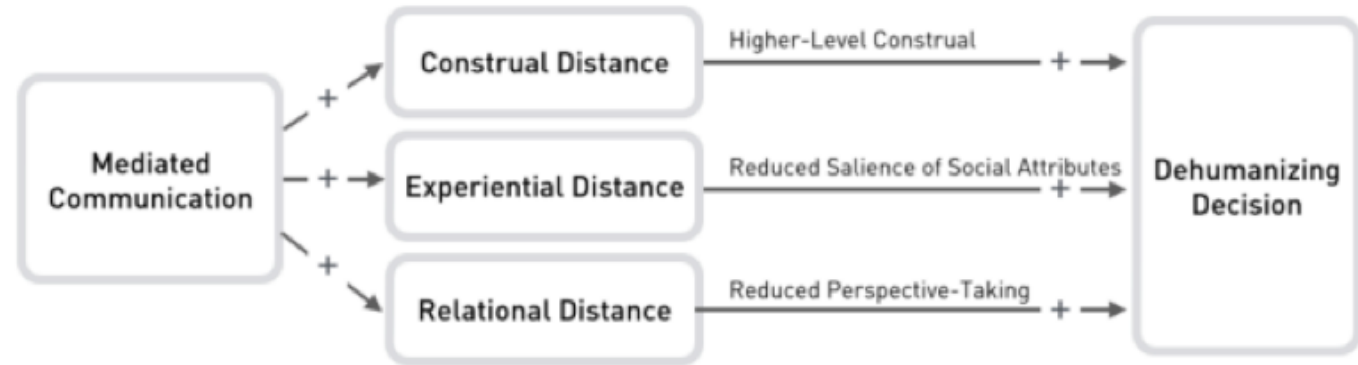
Will doctors act decide/act  
differently?





Min Kyung Lee conducted a study with 46 lay volunteers were asked to make medical decisions.

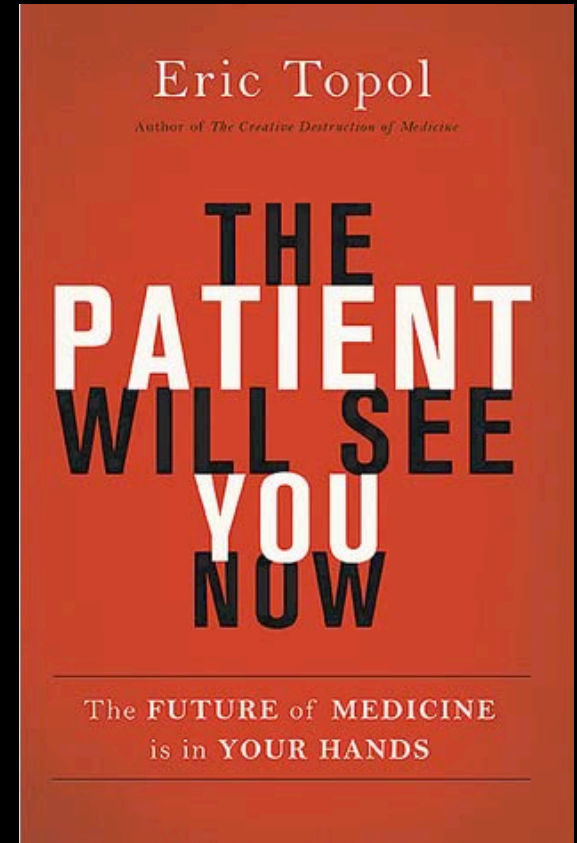
Half were face to face, half video linked.



# Will telemedicine bring doctors and patients closer, or push them apart?

*“[Telemedicine] approaches rely on physical separation; an absence of the direct contact that care traditionally entailed.*

*But being physically apart is antithetical to the essence of medicine: the human touch, the ability to meet in-person and the intimacy that enables compassion and empathy”.*









# Potential Impacts of Telemedicine

	For patients	For doctors	For health systems	For society
<b>Benefit</b>	inconvenience of appointments	Improve access to hard to reach groups	Reduce healthcare cost inflation	Reduce the carbon footprint of healthcare
<b>Drawback</b>	Burden of responsibility	Harder to pick up on hidden or adjacent agendas	Outsourced to expensive companies  Could create islands of data without oversight	Digital exclusion - ?widened health disparities

# Your thoughts on your future tele-careers...?

- Seeing/touching fewer people in person?  
Working from home?  
Seeing fewer colleagues?  
Less Team Based Care?
- What will doctors get to do with their “gift of time”?  
Will doctor workloads just be increased?  
Will staff be cut?
- Less ownership and oversight of your patients?
- Should we fear an age of “surveillance medicine”?  
Will anyone ever be well again?!



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