ERS EUROPEAN RESPIRATORY SOCIETY

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Digital respiratory medicine – realism vs futurism

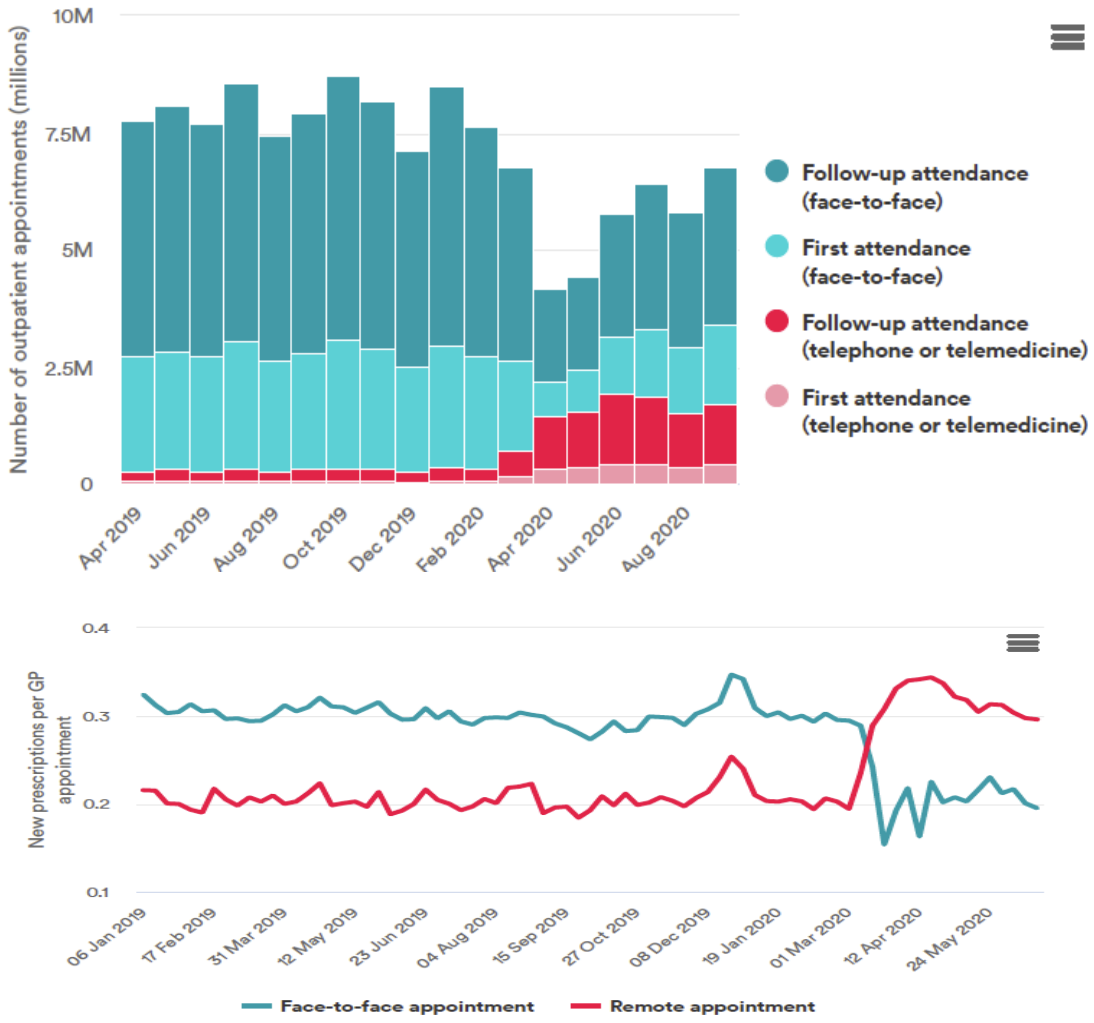
Anita K Simonds, President European Respiratory Society

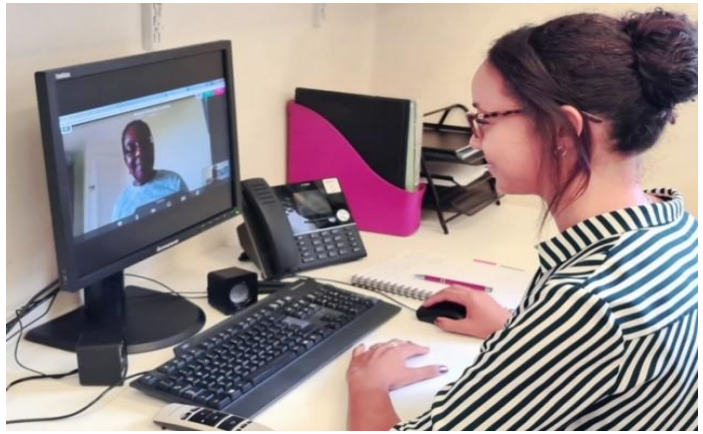
3rd-4th June 2021

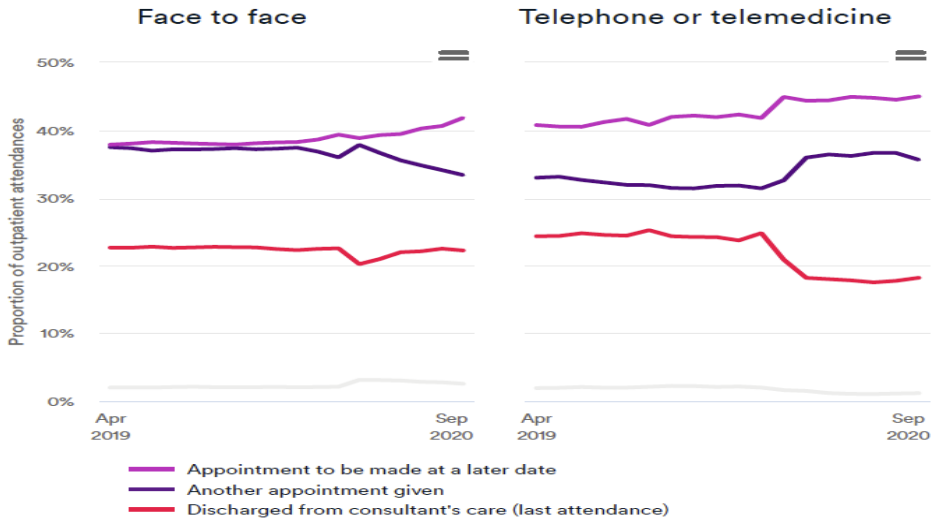
What’s the plan…

- Digital acceleration
- Evaluation
- Integration and new clinical pathways
- Access and equity
- Relevance to high and low resource settings

Digital acceleration – impact of covid-19



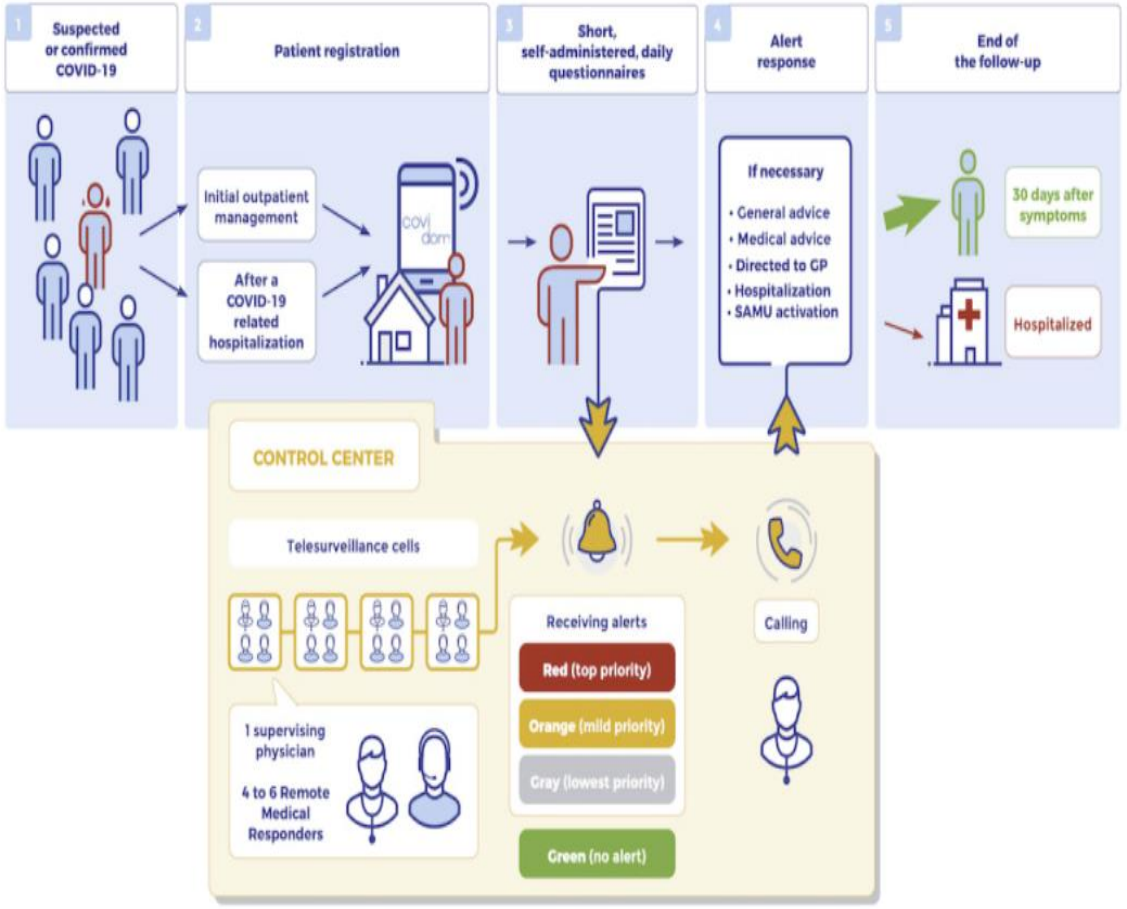




Impact on practice

Quality Watch 2021

The Virtual world

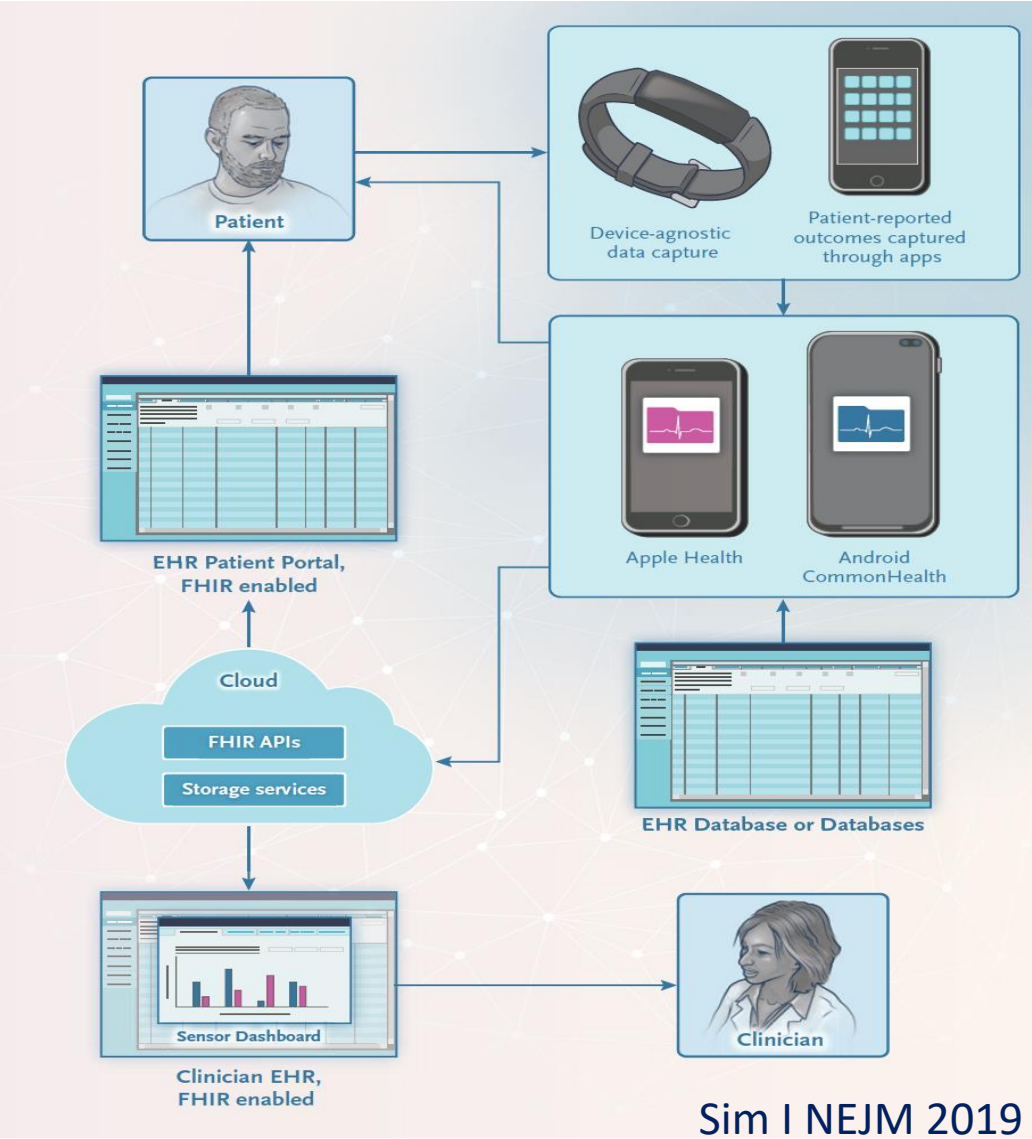


Covidom, France

Relevance to COPD, early discharge, post op care, clinical trials

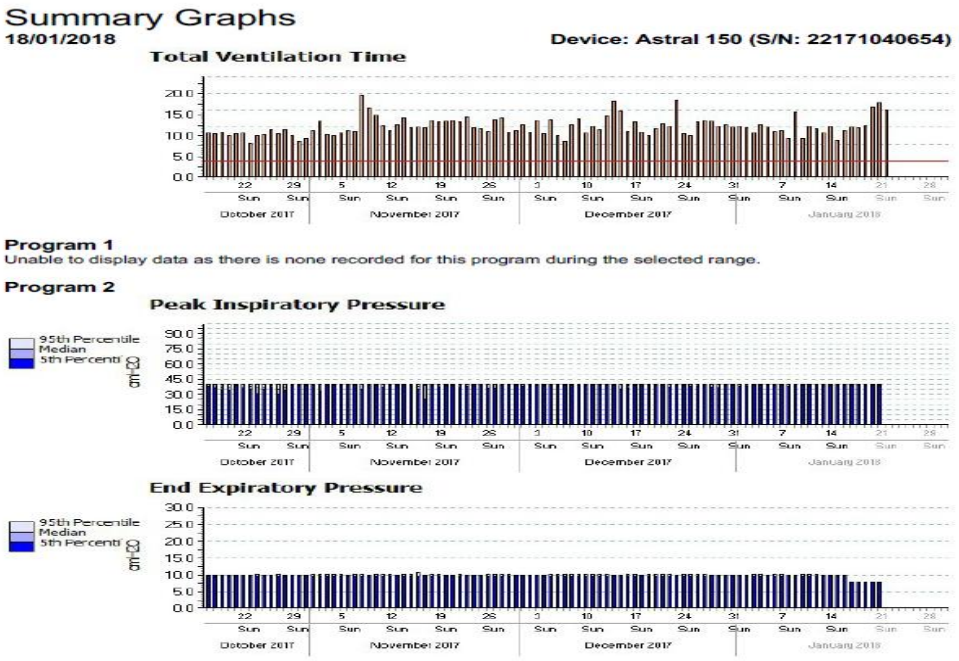
J Med Internet Res. 2020 Oct; 22(10): e20748.

Wearables, apps and telemonitoring

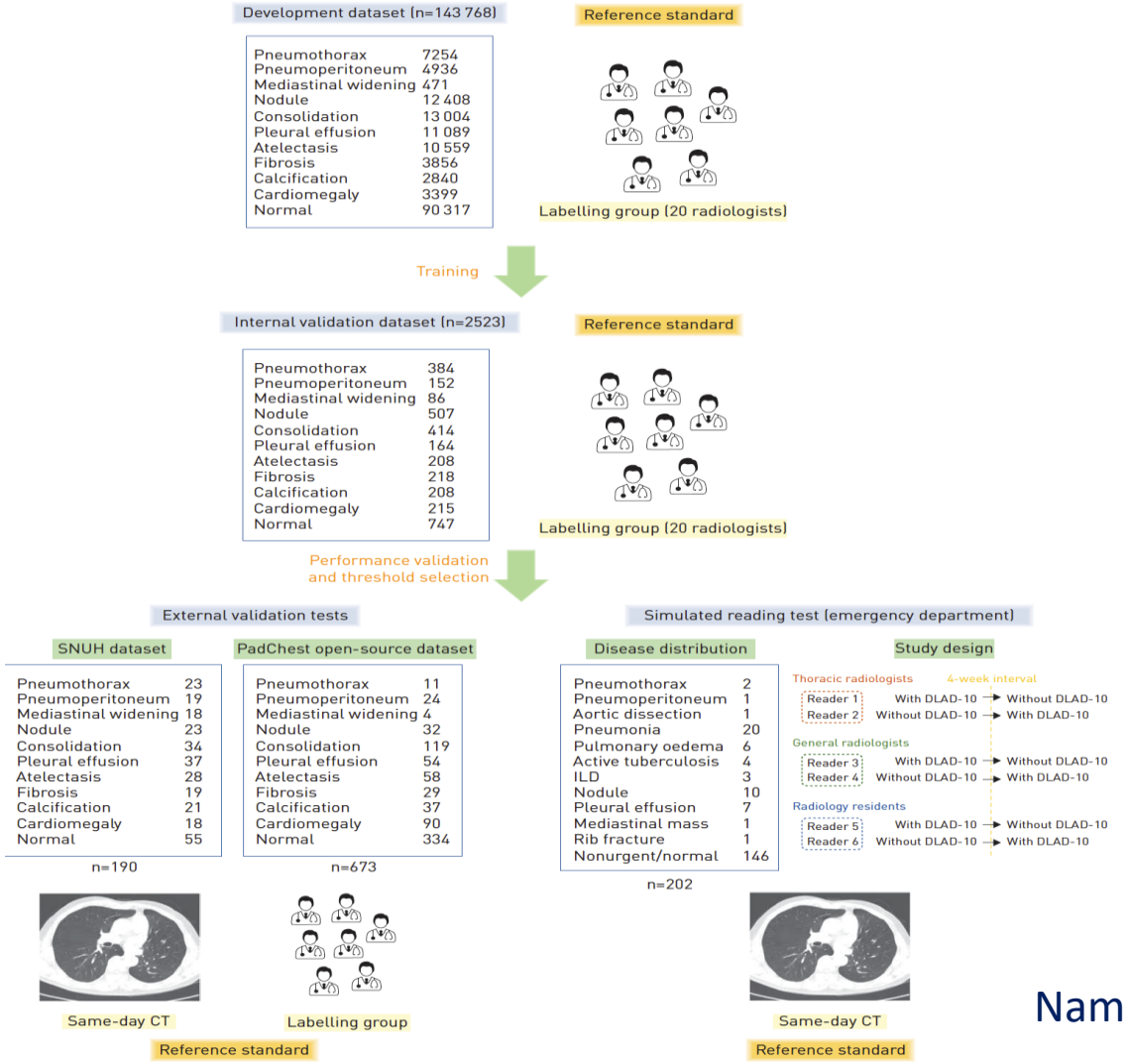


Sim I NEJM 2019

Choi J Clin Sleep Med 2018



Artificial intelligence, data - uses and counterbalances



- Narrow AI and then…..
- Clinical algorithms
- Deep learning
- Problems with data, ethics
- Whose data?

Nam et al ERJ 2021

Observer May 30 2021

Global relevance

- EU data space, regulations, barriers and ways forward
- Disease surveillance, real time data – ECDC
- Pharmacovigilance – EMA, diagnostics
- Digital inclusion, learning from patients, real world data
- Digital approaches in low resource settings

Integrated, patient-centred care and prevention	Video-observed therapy	Edible microchips transmitting to mobile electronic devices; registering the gesture of a specific patient taking a given pill
	Databasing laboratory results and patient parameters	Connected diagnostics Tracking disease biomarkers via 'wearables'
	Point of care testing	Digitisation of biological material (genome, chemistry), integration of data from multiple sources and remote consultation of experts
	Standardising anti-TB medication	Intimate monitoring of biomarkers to optimise care
	Internet-based reference and eLearning content	Decision aids informed by Big Data; advanced machine learning techniques Alerting people of exposure risks from real-time analysis of environmental and other data

Falzon D & Raviglioni M BMJ Global Health 2016

Digital exceptionalism?

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Editorial

Is digital medicine different?

To coincide with the 70th anniversary of the National Health Service (NHS) on July 5, a new NHS app enabling patients to make appointments, order repeat prescriptions, access their general practitioner (GP) records, and make urgent medical queries was announced by Jeremy Hunt, then UK Secretary for Health and Social Care. The app, developed by NHS England and NHS Digital, will be freely available from December, 2018. Hunt acknowledged that while technology has transformed many sectors, the health sector has remained comparatively unchanged. The UK, with its single predominant state-level health system, should be a strong candidate for rapid large-scale dissemination of digital innovations, and, in May this year, risk. Randomised controlled trials, the gold standard of evidence, are rarely used in digital medicine, partly because the current classification of clinical trials does not fit with the iterative nature of product design and because the cost of such trials is high compared with the product's perceived level of risk. The relatively low barriers to market entry have encouraged innovative small and medium sized companies, often new to the health market. Research, especially for AI work, remains centred on machine learning outcomes, and the shift to clinical outcomes has not kept pace with the products' move into clinical practice. Inherently, digital products collect a wealth of data in real time, and other methods

Fuse/Getty Images

Without a clear framework to differentiate efficacious digital products from commercial opportunism, companies, clinicians, and policy makers will struggle to provide the required level of evidence to realise the potential of digital medicine. The risks of digital medicine, particularly use of AI in health interventions, are concerning. Continuing to argue for digital exceptionalism and failing to robustly evaluate digital health interventions presents the greatest risk for patients and health systems. ■ *The Lancet*

From : Lancet 2018

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Prof Thierry Troosters, Past President, ERS