

TOPICAL REPORT

HEALTHCARE

Gain insight and keep up-to-date with the latest publications carefully selected by the library from credible sources in academic publications, industry & market research and scientific & industry news.

If you have any sources to suggest for our report please [let us know](#).

[view past reports](#)

[subscribe to others](#)

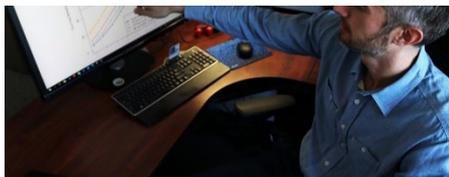
[unsubscribe](#)

news

academic

reports

COVID-19 UPDATES



Study to develop algorithms for detecting earliest signs of COVID-19 from biometric smartwatch data

"Purdue University researchers have begun a study that would help determine if continuously collected biometric smartwatch data could be used to reliably and accurately detect these signs early, which could indicate that a potentially asymptomatic user should get tested for COVID-19."

Source: Purdue

HEALTHCARE INNOVATIONS



Robotic muscles could turn back body clock by 2050

"emPOWER is a visionary project, led by Jonathan Rossiter, Professor of Robotics at the University of Bristol, in partnership with Imperial College, UCL and the NIHR Devices for Dignity MedTech Co-operative, hosted by Sheffield Teaching Hospitals Foundation Trust. The project will explore how artificial muscles could radically transform treatment options

HEALTH INNOVATIONS



CaproGlu: Multifunctional tissue adhesive platform

"Named CaproGlu, it is activated by a low dose of ultraviolet (UV) light that cures it in seconds, turning it from a liquid glue into a solid but flexible biorubber - a biocompatible material that can be resorbed by the tissue after a few weeks. This is a new type of surgical glue that can help join blood vessels and close wounds faster and may also serve as a platform to deliver pain relief drugs."

Source: Biomaterials

Porous microneedles on a paper for screening test of prediabetes

"Researchers have been trying to develop a practical way to use microneedles--tiny needles less than 1 mm in length--for routine do-it-yourself medical monitoring. Microneedles are so short that they stay within the skin and do not make contact with any neurons, meaning that they cause no pain. Rather than extracting blood, they draw up fluid in the skin that contains most of the important biomarkers that blood tests look for. Several types of microneedles exist, but until now, making a practical device that quickly analyzes the fluid has proved elusive."

Source: Medical Devices and Sensors

HEALTHCARE REPORTS



Loneliness Among Older Adults Before and During the COVID-19 Pandemic

"The National Poll on Healthy Aging team acknowledges the unprecedented challenges related to the ongoing COVID-19 pandemic, especially for older adults and their families. Although our work has shifted to a remote format, the NPHA team remains committed to continuing to share poll results to help inform and improve the overall health and well-being of older adults."

Source: National Poll on Healthy Aging

Accenture Digital Health Technology Vision 2020

"In our 2020 Digital Health Technology Vision, we explore how people's values are shifting, and digital age technology models are increasingly out of sync with them. Despite broadly benefitting from technology, people are expressing concerns about how it is used and what it is used for. And they are advocating for change."

Source: Accenture

Draft global strategy on digital health 2020-2025

"The draft global strategy on digital health builds on resolutions adopted by the United Nations General Assembly¹ and the World Health Assembly² related WHO global and

in the future and effectively turn back the body clock."

Source: University of Bristol

Ten innovations in the fight against COVID-19

"Around the world, organisations are deploying tried-and-tested technologies and developing new ones to accelerate healthcare innovation and fight the coronavirus. From revolutionary CRISPR techniques to 3D printing of personal protective equipment, here are ten of the most exciting examples"

Source: Raconteur

Healthcare Startups At The Center Of Data-Driven Pandemic Response

"Healthcare startups are challenging longtime industry practices and assumptions, transforming everything from patient care to organizational efficiencies. Here's how two entrepreneurs that recently participated in the latest healthcare-focused accelerator program at SAP.iO Foundry New York viewed their respective missions to help patients and providers in a vastly changed healthcare landscape."

Source: Forbes

HEALTHCARE TRENDS



Digital engagement and transformation of healthcare in Singapore

"IHIS, Singapore's national health IT agency aims to better digitally engage patients in a less transactional manner in the post pandemic era."

Source: Healthcare IT News

Healthcare consultations in the digital age – are carebots up to the job?

"Research shows that doctors who offer empathic and positive messages can reduce a patient's pain, improve their recovery after surgery and lower the amount of morphine they need. But it doesn't mean that telling a patient something simple, such as "this drug will make you feel better", will have an effect. It's more complicated than that, as our latest research shows."

Source: The conversation

AI in HEALTHCARE

Enhancing Patient Understanding of Medication Risks and Benefits

"SMART teaches evidence-based strategies and techniques that improve strategic thinking, increase productivity and foster innovation. It was developed and tested by BrainHealth researchers over the past three decades."

Source: Arthritis Care & Research

COVID-19



A structured open dataset of government interventions in response to COVID-19

"The CSH COVID-19 Control Strategies List (CCCSL) to date includes information on 6,068 interventions from 56 countries: 33 European, 12 Asian, five South American, two North American, three African, and one Oceanian countries, plus the cruise ship Diamond Princess. For the US, data were collected at the state level for 24 US states."

Source: Scientific Data

Improved Testing and Design of Intubation Boxes During the COVID-19 Pandemic

"Throughout the coronavirus disease 2019 pandemic, many emergency departments have been using passive protective enclosures ("intubation boxes") during intubation. The effectiveness of these enclosures remains uncertain. We sought to quantify their ability to contain aerosols using industry standard test protocols."

Source: Annals of Emergency Medicine

DeepCOVIDNet: An Interpretable Deep Learning Model for Predictive Surveillance of COVID-19 Using Heterogeneous Features and Their Interactions

"In this paper, we propose a deep learning model to forecast the range of increase in COVID-19 infected cases in future days and we present a novel method to compute equidimensional representations of multivariate time series and multivariate spatial time series data."

Source: IEEE

AI in HEALTHCARE

regional reports,3 regional strategies, the two-part report of the ISO Technical Committee on Health Informatics on eHealth architecture,4 the resolution on ICD-11 and the WHO Family of international classifications and terminologies, the three-part National eHealth strategy toolkit,5 Member States' current digital health situation and status, actions, strategies, policies and investments, and recommendations of various United Nations panels on digital and innovation topics."

Source: WHO

World Health Statistics 2020

"World Health Statistics 2020 sheds light on the progress towards relevant SDGs and their implications in the midst of the current COVID-19 emergency. The report highlights the need to track population health and its determinants in a comprehensive and continuous manner."

Source: WHO



These Are The Startups Applying AI To Transform Healthcare

"In which specific areas of healthcare can we expect AI to have a significant impact? It is helpful to break down the sprawling field of healthcare into three main categories: clinical (the delivery of care to patients), administrative (the operational nuts and bolts that keep the healthcare system running), and pharma (the research and development of new medical drugs)."

Source: Forbes

HEALTHCARE TECHNOLOGIES

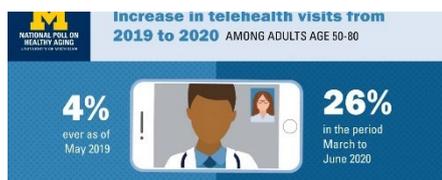


How Technology Is Changing Healthcare, Driven By The Pandemic

"Most healthcare systems have spent the last few months scrutinizing policies, procedures, processes and systems to see if they facilitate or hinder real-time data capture, analysis and distribution. Many are starting to accelerate planned technology implementations or working to scale already-deployed solutions to support additional use cases. However, the speed at which change is needed continues to exceed the speed at which change is actually occurring."

Source: Forbes

DIGITAL HEALTH



Telehealth visits have skyrocketed for older adults, but some concerns & barriers remain

"New data on telemedicine use by adults over 50 show change since previous poll in 2019, including reduced worries about privacy and virtual interaction"

Source: EurekAlert!



Improving the accuracy of medical diagnosis with causal machine learning

"The researchers used a new approach, known as causal machine learning - which is gaining increased traction in the AI community - to act as an 'imagination' so the AI could consider what symptoms it might see if the patient had an illness different to the one it was considering. The peer-reviewed research, published in Nature Communications, shows that disentangling correlation from causation makes the AI significantly more accurate."

Source: Nature Communications

Multiple instance learning for predicting necrotizing enterocolitis in premature infants using microbiome data

"Researchers from Columbia Engineering and the University of Pittsburgh have developed a sensitive and specific early warning system for predicting NEC in premature infants before the disease occurs. The prototype predicts NEC accurately and early, using stool microbiome features combined with clinical and demographic information."

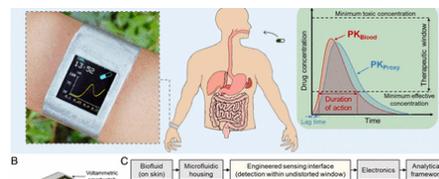
Source: CHIL '20: Proceedings of the ACM Conference on Health, Inference, and Learning

External Evaluation of 3 Commercial Artificial Intelligence Algorithms for Independent Assessment of Screening Mammograms

"In this case-control study that included 8805 women, 1 of the 3 externally evaluated AI computer-aided detection algorithms was more accurate than first-reader radiologists in assessing screening mammograms. However, the highest number of cases positive for breast cancer was detected by combining this best algorithm with first-reader radiologists."

Source: JAMA Oncology

MEDICAL WEARABLES



Noninvasive wearable electroactive pharmaceutical monitoring for personalized therapeutics

Smartphone app can predict asthma deterioration by measuring night-time coughing

"Researchers have shown that night-time coughing, measured via a smartphone app, can indicate that asthma is getting worse. The study was led by Dr Frank Rassouli, from the Cantonal Hospital St. Gallen, Switzerland. He told the virtual conference: "Until now, we haven't had a reliable tool for measuring peoples' asthma symptoms overnight, so we know very little about night-time coughing and what it means."

Source: EurekAlert!

China's Healthcare Industry – Opportunities in Telemedicine and Digital Healthcare

"In this three-part series we will take a look at the changes that are taking place in the healthcare industry in China in the following key health sectors: Telemedicine and digital healthcare, Medical devices Pharmaceutical industry"

Source: China Briefing

"Engineers at the UCLA Samueli School of Engineering and their colleagues at Stanford School of Medicine have demonstrated that drug levels inside the body can be tracked in real time using a custom smartwatch that analyzes the chemicals found in sweat. This wearable technology could be incorporated into a more personalized approach to medicine - where an ideal drug and dosages can be tailored to an individual."

Source: PNAS

DIGITAL HEALTH



The feasibility and acceptability of mobile health monitoring for real-time assessment of traumatic injury outcomes

"A new study - recently published in mHealth - from the University of Pennsylvania School of Nursing (Penn Nursing) is the first of its kind to examine how mobile health applications and text-based elicitation of patient-reported outcomes can be used better understand persistent challenges to recovery after a serious injury and hospitalization. This study showed that mobile health monitoring was feasible and acceptable including for select biometric indicators of physical activity and sleep, in a sample of Black men recovering from serious trauma in Philadelphia, PA who described past and current barriers to their access to health and social care resources."

Source: MHealth

Bridging digital health divides

"The future of digital health in India looks bright, with COVID-19 providing urgency to a sector that has seen much deliberation with limited action. It is important to now focus on building trust and reducing friction, between the existing health system and digital entrants. Patient primacy, ethical data use, respect for conventional health care, and sustainable growth models must be integral parts of the Indian digital health movement. For the foreseeable future, babies will still be delivered by humans, and public health infrastructure, strong social contracts, and thoughtful leadership will still matter most."

Source: Science Magazine

Acceptance and Commitment Therapy Delivered via a Mobile Phone

Messaging Robot to Decrease Postoperative Opioid Use in Patients With Orthopedic Trauma: Randomized Controlled Trial

“Patients who need surgery to fix major bone fractures use fewer opioid pills after their procedure if they’re reminded of their values - and those reminders don’t necessarily need to come from a doctor, according to a new study published in the Journal of Medical Internet Research.”

Source: Journal of Medical Internet Research

HEALTHCARE TECHNOLOGIES



Assessment of Brain Injury Using Portable, Low-Field Magnetic Resonance Imaging at the Bedside of Critically Ill Patients

“A portable, low-field magnetic resonance imaging (MRI) device can be safely used at bedside in complex clinical care settings to evaluate critically-ill patients for suspected stroke, traumatic brain injury (TBI), or other neurological problems, results of a proof-of-concept study show.”

Source: JAMA