

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

2019 - nCoV UPDATES



Study analyzes potential global spread of new coronavirus

"A report by the University's WorldPop team has found Bangkok (Thailand) is currently the city most at risk from a global spread of the virus - based on the number of air travellers predicted to arrive there from the worst affected cities in mainland China. Hong Kong (China) is second on the list, followed by Taipei (Taiwan, the Republic of China). Sydney (12), New York (16) and London (19) are among 30 other major international cities ranked in the research."

Source: EurekAlert!

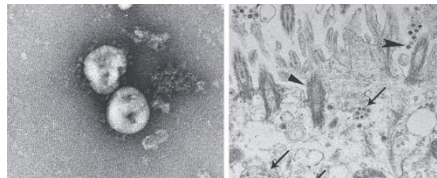
DIGITAL HEALTHCARE



Innovative app provides patient data on 7 conditions related to 40% of ED visits

"Doctors at Indiana University Health hospitals now have faster, easier access to information about the patients they are treating in the emergency department. The app, created in a partnership among Regenstrief Institute, Indiana Health Information Exchange (IHIE), IU Health

2019 - nCoV RESEARCH



A Novel Coronavirus from Patients with Pneumonia in China, 2019

"A previously unknown betacoronavirus was discovered through the use of unbiased sequencing in samples from patients with pneumonia. Human airway epithelial cells were used to isolate a novel coronavirus, named 2019-nCoV, which formed a clade within the subgenus sarbecovirus, Orthocoronavirinae subfamily. Different from both MERS-CoV and SARS-CoV, 2019-nCoV is the seventh member of the family of coronaviruses that infect humans."

Source: NEJM

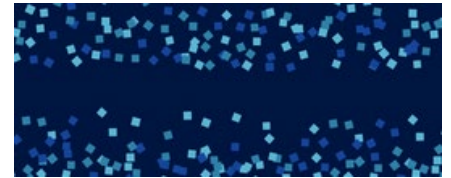
Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China

"A recent cluster of pneumonia cases in Wuhan, China, was caused by a novel betacoronavirus, the 2019 novel coronavirus (2019-nCoV). We report the epidemiological, clinical, laboratory, and radiological characteristics and treatment and clinical outcomes of these patients."

Source: The Lancet

HEALTH INTELLIGENCE

HEALTHCARE REPORTS



Definitive Healthcare's 2019 Artificial Intelligence Study

"Definitive Healthcare surveyed imaging leaders and radiologists at U.S.-based hospitals and imaging centers from October to December 2019 in its annual Artificial Intelligence Survey in order to determine the adoption rate, primary areas of use and, greatest challenges related to AI usage in imaging. Here are the results"

Source: Definitive Healthcare

Global Healthcare Market Outlook, 2020

"Amid rising global trade tensions and sluggish global economic outlook for 2020, the global healthcare market is expected to cross the \$2 trillion mark in 2020. Healthcare will be among the top two priorities for voters in the 2020 presidential election in the US. In the European region, looming BREXIT indecision is likely to have a strong impact on Europe's biggest digital health market (UK). Globally, 2020 will be a reality check for long-pending national healthcare policies and regulatory reforms that must re-invigorate future strategies. The new vision for healthcare for 2020 and beyond will not just focus on access, quality, and affordability but also on predictive, preventive, and outcome-based care models promoting social and financial inclusion."

Source: Frost and Sullivan

and Indiana University School of Medicine, provides clinicians with only the most relevant information from a patient's medical history related to the complaint that brought them to the hospital."

Source: EurekAlert!

Cybersecurity pros offer their 2020 predictions for healthcare

"Ransomware "will continue to be the biggest issue," says one expert – but a troubling new trend of attacking automatic software and firmware update systems is another area for concern."

Source: Healthcare IT News

MACHINE LEARNING & AI IN HEALTHCARE



New algorithm predicts gestational diabetes

"A new computer algorithm can predict in the early stages of pregnancy, or even before pregnancy has occurred, which women are at a high risk of gestational diabetes. The study analyzed data on nearly 600,000 pregnancies available from Israel's largest health organization, Clalit Health Services. Based on these predictions, it may be possible to prevent gestational diabetes using nutritional and lifestyle changes."

Source: Weizmann Institute of Science

AI can jump-start radiation therapy for cancer patients

"Artificial intelligence can help cancer patients start their radiation therapy sooner – and thereby decrease the odds of the cancer spreading – by instantly translating complex clinical data into an optimal plan of attack."

Source: UT Southwestern

Definitive Healthcare Releases Results of AI Use in Imaging Survey

"Definitive Healthcare, a provider of data, intelligence and analytics on healthcare organizations and practitioners, released results from its 2019 AI Use in Imaging Survey. In this survey, Definitive Healthcare polled imaging center leaders and radiologists at U.S.-based acute hospitals and imaging centers from October to December 2019 to determine the adoption rate, primary areas of use, and greatest challenges related to AI usage in imaging."

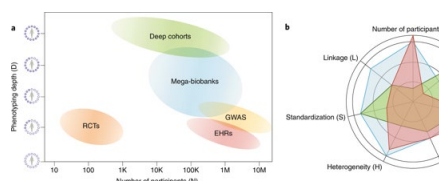


Precision medicine integrating whole-genome sequencing, comprehensive metabolomics, and advanced imaging

"The study showed that by integrating whole-genome sequencing with advanced imaging and blood metabolites, clinicians identified adults at risk for key health conditions. Data from 1190 self-referred individuals evaluated with HLI's multi-modal precision health platform, Health Nucleus, show clinically significant findings associated with age-related chronic conditions including cancer, heart disease, diabetes, chronic liver disease, and neurological disorders -- leading causes of pre-mature mortality in adults."

Source: PNAS

MACHINE LEARNING & AI IN HEALTHCARE



Axes of a revolution: challenges and promises of big data in healthcare

"Here we characterize various properties of medical data, which we refer to as 'axes' of data, describe the considerations and tradeoffs taken when such data are generated, and the types of analyses that may achieve the tasks at hand."

Source: Science Medicine

Machine Learning to Analyze Single-Case Data: A Proof of Concept

"Thus, the purpose of our study was to (a) examine correspondence between visual analysis and models derived from different machine learning algorithms, and (b) compare the accuracy, Type I error rate and power of each of our models with those produced by the DC method."

Source: Perspectives on Behavior Science

Deep learning-based single-shot prediction of differential effects of anti-VEGF treatment in patients with diabetic macular edema

"The objective of this study is to automatically predict the efficacy of anti-VEGF treatment of DME in

Global Biometrics in Healthcare Market, Forecast to 2024

"The global market for biometrics in healthcare is witnessing strong revenue growth, with a higher rate of adoption of electronic healthcare systems and digital tools for healthcare. The rise of a smart, connected healthcare system augurs well for the uptake of biometrics in healthcare. Worldwide adoption of electronic health records is the key marker driver for biometrics in healthcare."

Source: Frost and Sullivan

AI Therapeutics announces that a common LAM-002 mechanism in cancer and neurodegenerative diseases shows antitumor activity in the clinic and hope for ALS

"AI Therapeutics is a clinical-stage biopharmaceutical company that has created an artificial intelligence-driven drug development platform for matching drugs to new indications. The company has made significant recent progress with its four clinical assets and proprietary Guardian Angel™ algorithm."

Source: EurekAlert!

MEDICAL NEWS



The future of implants in the latest Medical Technology

"To kick off the new decade, we find out how technological innovations are revolutionising hearing aids, speak to industry insiders to understand how 3D printing is changing dentistry, and examine the challenge of regulating implants as the market continues to expand and new technologies continue to blur the boundaries between what is and is not a medical device."

Source: Medical Device Network

5 tips to raise funding for your medical device

"Securing funding can be a long and tedious process, and medical device businesses must work to position themselves as especially attractive to potential investors to maximize success and accelerate the fundraising process."

Source: Medical Design and Outsourcing

Three Healthcare Trends To Watch In 2020

"America's approach to health care is changing, and I predict 2020 will be another important year in which medtech and retail health companies will continue to adjust it. Here are some of the key trends to watch in the new year and where opportunities exist for anyone in the industry"

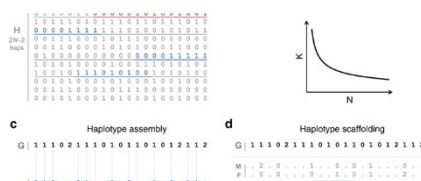
Source: Forbes

MEDICAL DEVICES

individual patients based on optical coherence tomography (OCT) images. We performed a retrospective study of 127 subjects treated for DME with three consecutive injections of anti-VEGF agents."

Source: Biomedical Optics Express

DIGITAL HEALTHCARE



Electrical impedance as an indicator of microalgal cell health

"e developed a microfluidic platform for measuring electrical impedance at different frequencies using the bacterium-sized green alga Picochlorum SE3. The cells were cultured under different salinity conditions and sampled at four different time points. Our results demonstrate the utility of electrical impedance as an indicator of cell phenotype by providing results that are consistent with known changes in cell size and physiology."

Source: Scientific Reports

Novel gas sensing platform based on a stretchable laser-induced graphene pattern with self-heating capabilities

"Here, a novel gas sensing platform based on a highly porous laser-induced graphene (LIG) pattern is reported. The LIG gas sensing platform consists of a sensing region and a serpentine interconnect region. A thin film of metal (e.g., Ag) coated in the serpentine interconnect region significantly reduces its resistance, thereby providing a localized Joule heating in the sensing region (i.e., self-heating) during typical measurements of chemoresistive gas sensors."

Source: Journal of Materials Chemistry A

Approaches to Defining Common and Dissociable Neurobiological Deficits Associated with

Psychopathology in Youth

"Here we review progress and next steps in efforts to parse heterogeneity in psychiatric symptoms in youth by identifying abnormalities within neural circuits."

Source: Biological Psychiatry

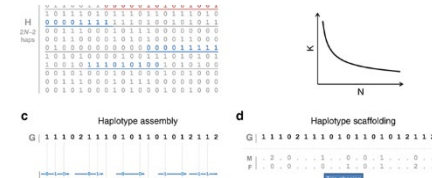
WEARABLES HEALTHCARE



Do We Know When Medical Devices Fail?

"Since 2015, the FDA and the US Department of Homeland Security have been releasing warnings about products that due to their vulnerabilities threaten patient safety. This includes MRI machines and drug infusion pumps that supply patients with a wide diversity of drugs, including insulin, antibiotics, chemotherapy drugs, and pain relievers. The interconnectivity of smart devices with medical clinical systems leaves them vulnerable to security breaches just like any other networked computing system. If hackers succeed in tampering with medical devices, patient safety is at risk."

Source: HIT Consultant

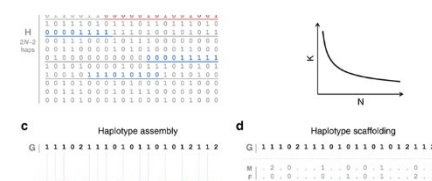


Harnessing wearable device data to improve state-level real-time surveillance of influenza-like illness in the USA: a population-based study

"Consequently, we aimed to evaluate if population trends of seasonal respiratory infections, such as influenza, could be identified through wearable sensors that collect RHR and sleep data."

Source: The Lancet Digital Health

MEDICAL DEVICES



Magnetic nanostructures for emerging biomedical applications

"This work focuses on understanding three different magnetic nanostructures, disks in the vortex state, synthetic antiferromagnetic particles and nanowires, first, by explaining their interesting properties and how they behave under an applied external field, before reviewing their potential applications for each of the aforementioned techniques."

Source: Applied Physics Reviews 7