



Abstract Book

**NURSING2023
&
VACCINES2023**

International Summit on
Nursing and Healthcare

International Summit on
Vaccines Research and Development

September 11-12, 2023 | San Francisco, USA



FOREWORD

It is our pleasure to invite all scientists, academicians, young researchers, business delegates and students from all over the world to attend the **International Summit on Nursing and Healthcare** and **International Summit on Vaccines Research and development** will be held in **San Francisco, USA** during **September 11-12, 2023**.

ISNH2023 & ISVRD2023 shares an insight into the recent research and cutting edge technologies, which gains immense interest with the colossal and exuberant presence of young and brilliant researchers, business, delegates and talented student communities.

ISNH2023 & ISVRD2023 goal is to bring together, a multi-disciplinary group of scientists and Nurses from all over the world to present and exchange break-through ideas relating to the Nursing and Healthcare & Vaccines Research and Development. It promotes top level research and to globalize the quality research in general, thus makes discussions, presentations more internationally competitive and focusing attention on the recent outstanding achievements in the field of Nursing and Healthcare & Vaccines Research and Development.

We're looking forward to an excellent meeting with scientists from different countries around the world and sharing new and exciting results in Nursing and Healthcare & Vaccines Research and Development.

COMMITTEES

Organising Committee

Tracy Jones-darnell	Nightingale College, USA
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Clarice Martins	Federal University of Paraiba, Brazil
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Brenda F. Seals	College of New Jersey, USA
Xingmin Sun	University of South Florida, USA
Luca Roncati	University Hospital of Modena, Italy
Luisa Maria Arvide Cambra	University of Almeria, Spain
Sinisa Franjic	Independent Researcher, Republic of Croatia

Seismic Shifts in the Vaccine Industry and the Coming Wave of New Vaccines

Nick Valiante

Co-Founder & CSO Innovac Therapeutics, USA

Abstract

The vaccine industry is historically resistant to change with high barriers to entry. This has changed with the revolution in mRNA vaccines driven by the SARS CoV2 pandemic and the recent clinical signals with mRNA-based personalized cancer vaccines. The presentation will outline the major opportunities and challenges facing the vaccine industry today and how recent and dramatic paradigm shifts will shape the future. Although mRNA is a major disruptor for vaccine development, there are other trends and forces that have been driving the industry to innovate and evolve that are now being rethought with the emergence of mRNA vaccines.

Biography:

Dr. Valiante is a vaccine industry thought leader with deep experience in all aspects of vaccine design, development, and clinical testing. A veteran of Chiron, Novartis, GSK, Moderna, and Glyde Bio, he has advanced vaccines and therapeutics to clinic targeting infectious diseases, cancer, allergy, autoimmunity, and aging. Nick has led clinically successful scientific and technical teams across a multitude of vaccine and biopharma platforms with world-class expertise in mRNA vaccine development. At Chiron/Novartis/GSK Dr. Valiante rose to the level of Global Head of Immunology and Immunotherapy, where he pioneered mRNA technologies as vaccines and therapeutics. In 2015 he joined Moderna Therapeutics during their hyper-growth phase and built their personalized cancer vaccine (PCV) platform (mRNA 4157) and KRAS vaccine program (mRNA 5173). Here, he exploited the unique advantages of mRNA to develop a best-in-class PCV in 2 years, that has recently yielded impressive efficacy data in a Phase IIb trial in melanoma. As Chief Scientific Officer he brings an unparalleled depth and breadth of vaccine and mRNA development experience to the Innovac team. Dr. Valiante holds a BA from Boston University in Evolutionary Biology, a PhD from the University of Pennsylvania in Immunology, and received post-graduate training at Stanford University.

Leveraging Intentional Leadership to Reduce Burnout

Linda Burrell

Cognosante, USA

Abstract

Many of today's healthcare organizations are struggling with employee burnout and low engagement. An entire industry has emerged in response to the growing burnout crisis, providing coaching and consultation to executives and leaders attempting to quell burnout in their organizations. Many of the methodologies have nuanced similarities in framework bearing different verbiage to describe approach and associated actions. What this paper examines is the single commonality of intentionality that drives many of the current methodologies. Intentional leadership behaviours, habits, and mindset positively influence the burnout experience of employees. Intentional leaders see greater employee engagement and employee satisfaction. Organizations where burnout is lower and engagement is high also tend to experience less turnover (De Hert, 2020), more innovation, better patient safety outcomes (Garcia et al., 2019; Shanafelt et al., 2010), and greater patient satisfaction. Leadership was recognized by Sims et al., (2015) as a foundational necessity for innovation, shared purpose, and critical reflection among teams; this idea sets the stage for further exploration of the essential functions and impact of specific leader-follower interactions.

Keywords:

Intentional leadership; burnout; employee engagement

Biography:

Linda Burrell is a masters prepared Registered Nurse with over 23 years of Nursing experience including 15 years' experience in progressive leadership roles. She earned her Bachelor of Science in Nursing and Master of Science in Nursing Administration from Western Carolina University in Cullowhee, North Carolina, USA. She is currently pursuing a Doctorate in Healthcare Administration from Capella University in Minneapolis, Minnesota, USA. Ms. Burrell is a Senior Program Manager at Cognosante in Falls Church, Virginia, USA and has served as a Leader Coach to executives and frontline leaders in medical centers over the last 3 years. Ms. Burrell has a particular interest in how healthcare leaders might use evidence-based behaviours to improve the experience of his/her employees and improve safety for patients.

Data-Driven Decision Making: Essential Techniques for Healthcare

Dario Brito Calçada

State University of Piauí, Brazil

Abstract

This article presents a comprehensive overview of a groundbreaking research study focusing on the integration of artificial intelligence (AI) in healthcare decision-making and management processes. The research aims to harness the potential of AI to improve patient care, optimize resource allocation, and enhance overall healthcare management. The study employed a mixed-methods approach, combining both qualitative and quantitative data collection techniques. Researchers gathered large datasets from various healthcare facilities, including patient records, treatment outcomes, and operational data. They also conducted interviews and surveys with healthcare professionals and administrators to gauge their perspectives on the potential impact of AI in decision-making processes. A range of AI algorithms was utilized in the research, including machine learning, natural language processing (NLP), and deep learning models. Machine learning algorithms were deployed to analyze patient data and identify patterns in disease progression, treatment responses, and potential risk factors. NLP was applied to extract valuable insights from unstructured data, such as medical notes and research papers. Additionally, deep learning models were utilized to predict patient outcomes based on various parameters. The integration of AI in healthcare decision-making processes exhibited significant advantages. AI-powered decision support systems facilitated accurate and timely diagnoses, enabling healthcare professionals to design personalized treatment plans based on a patient's unique characteristics. Additionally, AI algorithms helped identify potential adverse events and early warning signs, enhancing patient safety and reducing preventable medical errors. In healthcare management, AI demonstrated remarkable potential for optimizing resource allocation and operational efficiency. AI-driven systems analyzed patient flow and demand patterns, allowing hospitals to allocate resources more effectively and reduce waiting times. Furthermore, predictive analytics assisted in inventory management, ensuring a consistent supply of medical equipment and medications. Despite the promising outcomes, the research also identified some challenges and ethical considerations associated with AI implementation in healthcare. Issues such as data privacy, transparency of algorithms, and bias mitigation were highlighted as crucial areas for improvement. Ensuring AI systems are fair and equitable and gaining the trust of healthcare professionals and patients remain essential for successful AI integration. In conclusion, this research highlights the potential of AI in revolutionizing

healthcare decision-making and management. The findings underscore the importance of continued efforts to develop robust and ethically sound AI systems for enhancing patient care and healthcare efficiency. As technology continues to evolve, the successful integration of AI in healthcare holds the promise of transforming the industry and positively impacting millions of lives.

Keywords:

Artificial Intelligence, Association Rules Networks, Decision-making, Health Care.

Biography:

PhD in Computing and Computational Mathematics from the University of São Paulo (USP) at the Institute of Mathematics and Computing Sciences (ICMC). Master in Biotechnology from the Federal University of Piauí with emphasis on Computational Intelligence applied to nanotechnology and biotechnology. Bachelor in Computer Science from the State University of Piauí. He has been a professor since 1998 and has experience in the area of Computer Science, as well as Mathematics and Physics. He acted as a mathematics and physics teacher in pre-university courses. He is currently an effective professor at the State University of Piauí with research and extension projects in the areas of Computational Intelligence Applied to Health, Data and Text Mining and Data Sciences, in addition to Social Projects with the "Luz da Esperança" Social Works.

Analysis of Childhood Vaccination Data in Brazil Using Artificial Intelligence Techniques

Jaina Carolina Meneses Calçada

State University of Piauí, Brazil

Abstract

Several issues can arise in the process of childhood vaccination in Brazil, affecting the effectiveness and scope of vaccine coverage. Attention is drawn to low vaccine coverage, inadequate infrastructure, lack of awareness, and difficulties in recording. This article presents research that aimed to analyze and understand patterns of childhood vaccine coverage in Brazil through the collection of data from the TabNet system and the application of advanced artificial intelligence techniques. The study aimed to identify correlations and trends in vaccination data, contributing to the improvement of public health strategies and enhancing vaccine coverage. Data collection was conducted through the TabNet system, a platform that provides public health information. Data related to childhood vaccination, such as vaccine types, demographic information, and vaccine coverage from 2013 to 2023, were obtained. This data was processed and prepared for subsequent analysis. For pattern analysis, artificial intelligence techniques using Association Rule Networks were employed. The Filtered-Extended Association Rule Networks (Filtered-ExARNs) technique was used for automated knowledge extraction, enabling visual analysis of knowledge through the use of network structures and rule filtering with the study of more than one target item. The primary scientific contribution was the use of a technique for analyzing vaccine coverage data. The results revealed significant insights into childhood vaccination behavior. Seasonal patterns were identified, showing variations in vaccination rates over the years, especially with the impact of the COVID-19 pandemic. In conclusion, the research demonstrates the effectiveness of combining data from the TabNet system with Association Rule Network techniques to uncover complex patterns in childhood vaccination. This approach can guide public health decisions, promoting a better understanding of the factors influencing vaccine adherence and assisting in the design of initiatives aimed at increasing vaccine coverage and, consequently, protecting children's health.

Keywords:

Association Rules Networks, Childhood Vaccinations, Pattern Recognition, Public Health.

Biography:

She is a PhD student in Public Health and Environment - PPGSPMA/Ensp/Fiocruz. Master in Family Health by the Northeast Family Health Training Network (RENASF), Nucleadora State University Vale do Acaraú (UVA). Post-graduated in Family Health from the Federal University of Piauí (UFPI), in Elderly Health from the Federal University of Maranhão (UFMA) and in Intensive Care from the State University of Piauí (UESPI). Graduated in Nursing from the State University of Piauí. Effective nurse in the municipality of Cajueiro da Praia-PI working in the Family Health Strategy. She is currently a substitute professor at the State University of Piauí where she also participates in innovation research and development of health applications in the Group for the Study and Development of Intelligent Applications (GEDAI), in addition to acting as a professor in Postgraduate courses and experience in Technical Courses in Nursing.

The Up-Hill Battle to Improve Vaccine Uptake: Sisyphus takes on Hesitancy among Diverse US Groups

Brenda Seals

The College of New Jersey, USA

Abstract

Without widespread adoption of vaccines, their effectiveness to control disease outbreaks is undermined. While vaccine hesitancy and resistance have been a continuing problem, low vaccine uptake rates could be an even bigger problem when we face the next pandemic. While many scientists consider the implementation of their innovations beyond their control, given the level of distrust in science, it behooves all politicians, medical providers, public health professionals and scientists to be prepared to champion innovation. At every opportunity for public speaking and forums, explaining the science, being able to talk about it in layman terms, and practicing discussions so we can be strategic in our health communications is needed. This review of best practices for addressing vaccine hesitancy and resistance will focus on how to explain vaccines and innovations targeting vulnerable and under-served groups. I will also review studies of vaccine uptake, health education interventions and discuss policy and health infrastructures required to improve trust in science, health agencies and health care providers. By being champions for vaccines, the innovations previewed through the next two days may find clinical success as part of protecting from the wide array of possible threats to our health and well-being.

Biography:

Brenda F. Seals, PhD, MPH, MA is Professor and Chair, Department of Public Health at The College of New Jersey. With colleagues, she conducted extensive work in vaccine hesitancy among NJ minority groups, vaccine program roll-out among Departments of Health and is beginning a study on vaccine health education best practices for vaccine providers like pharmacists. Her areas of research are COVID-19, cancer, HIV/AIDS, violence and injury and mental health. She has extensive experience working with Native American, Latinx and African American communities. She works with NJ state, county and municipal Departments of Health to identify and remediate COVID-19 health disparities. She was PI for an NIH grant with a subcontract to improve Health Literacy with the Trenton library. She served as an Investigator on many Community Based Participatory Approach projects including a Patient Centered Outcomes Research Institute (PCORI) study of hepatitis among Asian Americans living from



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Delaware to New York City. And she was an evaluator and oversaw intervention components of a CDC REACH grant geared to improve diets among Chinese, Vietnamese, Korean and Filipino Community Based Organizations serving meals to community members. Another component of the REACH grant works with Asian supermarkets to promote healthier foods and improve store offerings of lower salt, higher fiber and better oil products. With Dr. Greg Seals, she is co-leading studies of the theory of educational energy provided in public health education settings. Most recently she is embarking on a study of a mental health intervention for those experiencing life changing injury mostly due accidents. Dr. Seals teaches Research Methods, Grant Writing and oversees Capstone Projects for the BS and MPH programs.

Structural Analysis and Domain Stabilization of an HCV E1E2 Vaccine Candidate

Thomas R. Fuerst

University of Maryland, USA

Abstract

Development of an effective vaccine for hepatitis C virus (HCV) requires a vaccine that elicits immune responses to key conserved epitopes. Based on the structures of broadly neutralizing antibodies (bnAbs) targeting key epitopes of the E2 ectodomain and the HCV E1E2 heterodimer, and our recent cryoEM structural analysis of a native-like secreted form of the E1E2 heterodimer (sE1E2), we designed immunogens to modulate the structure and dynamics of E1E2 to favor induction of bnAbs in the context of a vaccine. Here, we describe the antigenicity and immunogenicity of these sE1E2 designs, in comparison to membrane-bound E1E2 (mbE1E2), in murine and macaque model systems using our polyphosphazene-based immunoadjuvant delivery system. In addition, we evaluated the protective efficacy of immunized macaque purified IgGs passively transferred into a human-liver mouse chimeric model of HCV infection. Our results show that antigen optimization through structure-based design is a promising route for enhanced epitope presentation, and secreted E1E2 serves as a promising HCV vaccine candidate for further development.

Biography:

Dr. Fuerst is a professor in the Department of Cell Biology and Molecular Genetics, University of Maryland (UMD). He also served as director of the Institute for Bioscience and Biotechnology Research (IBBR), UMD, in which the Institute's mission is focused on biomolecular structure-function relationships and measurement sciences with an emphasis on structure-based vaccine design, next generation protein therapeutics, and macromolecular Delivery systems. Dr. Fuerst has over three decades of research and development experience in Vaccines and immunotherapeutics. At UMD-IBBR, his current research is focused on hepatitis C virus, ebolavirus, and SARS-CoV-2, and development of innovative delivery systems incorporating small molecule agonists to stimulate potent immunological responses. Prior to joining UMD, he was a founding scientist at Med Immune (now AstraZeneca) and later joined the U.S. Department of Health and Human Services as director of vaccines and biologics in the Office of the Secretary. In this capacity, he helped establish and lead the Biomedical Advanced Research and Development Authority (BARDA) responsible for the development and acquisition of vaccines and immunotherapeutic products for biodefense and other emerging public health threats. Early in his career, he served as a senior fellow at the



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National Institutes of Health, National Institute of Allergy and Infectious Diseases. He holds a BA in biochemistry from the University of California at Berkeley, a PhD in molecular genetics from Cornell University, and a MBA in science, technology, and innovation from the George Washington University.

Development of SARS-Cov-2 & MERS-Cov Attenuated Vaccine Strains by Cold Adaptation in Cells

Sang Heui Seo

Chungnam National University & Pioneer Vaccine Inc., South Korea

Abstract

Many viral vaccines including Measles, Mumps, Rubella, Rotavirus, & Japanese encephalitis virus have been produced in cells using the live attenuated vaccine strains. The live attenuated vaccine strains can be used for producing the live attenuated vaccines or the inactivated vaccines in GMP facility. Here, we describe the development of live attenuated vaccine strains against pandemic SARS-CoV-2 and pandemic potential MERS-CoV in Vero cells using the cold adaptation up to 22°C. The cold adaptation of both viruses took about 2-3 months to 22°C, and the adapted viruses were highly attenuated in mouse models. One-shot nasal vaccination conferred mice the complete production without mortality and viral detection in organs. The inactivated split spike-protein vaccines without adjuvant for SARS-CoV-2 and MERS-CoV, which were produced in Vero cells with the live attenuated vaccine strains were also immunogenic. Our study suggests that the cold adaptation technology in cells can apply to develop the attenuated viral vaccine for other pandemic or pandemic potential viral diseases, which enables the vaccines to be produced in cells under conventional GMP facility.

Biography:

Prof. Sang Heui Seo got DVM degree in 1988 from Kyungpook National University, Daegu, South Korea, and has completed his PhD on viral immunology in 1997 from Texas A & M University, College Station, Texas, USA. He experienced Postdoctoral Studies in University of Minnesota and St. Jude Children's Research Hospital, USA from 1998 to 2002. He joined the faculty member in College of Veterinary Medicine, Chungnam National University in 2002. He has published more than 70 papers in reputed journals on viral pathogenesis and vaccine. He founded Pioneer Vaccine Inc. in 2021, which is specialized in developing human viral vaccines based on cells.

Improving Student Health Outcomes for LGBTQ+ Adolescent Students

Leticia Esau

Riverside County Office of Education, USA

Abstract

Studies of LGBT adolescents have documented various social, physical, and mental health challenges due to their sexuality. LGBT adolescents face more significant disparities in all aspects of life, including the educational setting. Despite the growing research on peer-to-peer interactions in the educational setting as it pertains to LGBT youth, little attention has been given to the experiences that LGBT youth have had with adults in this setting. Research indicates a wide range of disparities in health and well-being outcomes between lesbian, gay, bisexual, and transgender (LGBT) populations. The research literature on lesbian, gay, bisexual, and transgender (LGBT) adolescents indicates that we know they face more significant disparities in all aspects of life, including in the educational setting. These factors include less access to insurance and health care services, lower overall health status, higher rates of smoking, alcohol, and substance abuse, higher risk for mental health illnesses (anxiety and depression), higher rates of sexually transmitted diseases, and increased incidence of some cancers. Healthcare providers are in an optimal position to obtain learning opportunities related to cultural competence to effectively provide care for this population. Access to culturally competent LGBT providers in the traditional healthcare setting, and school setting is still challenging among providers who wish to enhance their skills and knowledge for effectively addressing the needs of LGBT youth. Still, because of the lack of knowledge in effectively engaging with this population, there is a level of discomfort experienced by most providers.

Keywords:

LGBT adolescents, adolescent health, sexual orientation, cultural competence, policy development, mental health, disparities

Biography:

Leticia Esau PhD RN PHN serves as the Administrator of Health Services for the Riverside County Office of Education. Leticia currently provides support to all school districts within Riverside County to ensure optimal student health for students in Pre-K-12th grades. She is active in various committees including Early Education collaborative for San Bernardino and Riverside Counties, the Physician and School Nurse collaborative for Riverside County, and the School Nurse collaborative for San Bernardino and Riverside Counties.

Delirium and Falls in Old Age

Mohan Rajendra Gondhalekar

North East London NHS Foundation Trust, UK

Abstract

Delirium is a disorder of cognition of acute onset. It can occur in previously healthy people, but commonly occurs in those who have some cognitive impairment already. It is reversible in most cases. Delirium is very common amongst hospital patients, but it can be easily missed because the symptoms are assumed to be due to Dementia. My presentation at the conference will be on Delirium and falls in the elderly. I will speak about Delirium and Dementia and how they are different. I will also speak about the assessment, prevention, investigation, and management of Delirium. Recent studies report that 73 – 96% of patients who fell during their hospital stay had symptoms of delirium, and delirium went undiagnosed in 75% of cases.

Patients with delirium and dementia are much more vulnerable to falling in hospital because: (1) they may forget they need to ask for help or how to ask for help, (2) they may put themselves at risk because of agitation and anxiety, (3) they may find it difficult to recognise hazards in an unfamiliar environment, (4) they may find it difficult to find things that they want to find (such as the toilet or a familiar face) and therefore they may walk constantly until exhaustion makes them less steady on their feet, (4) they may be unable to adapt to any new problems they have with mobility (for example – a recent injury or stroke), (5) they may forget how to use mobility aids safely, and (5) they will find it difficult to save themselves if they do start to fall.

During the presentation I also discuss more about the detection of delirium clinically and the subtypes of delirium that exist, the risk factors and the precipitants of delirium, and the importance of preventing delirium on obtaining positive patient outcomes. I also talk about history taking, examination, and what routine investigations are required for patients who are suspected of having delirium. I then discuss important nursing measures and pharmacological management options available to best manage delirium.

Keywords:

Delirium, Dementia, Depression, Falls

Biography:

Dr. Gondhalekar completed his medical training in 2011 and qualified with an MBChB and an BMedSci from the University of Birmingham, School of Medicine, College of Medical and Dental Sciences. He went on to complete Postgraduate Core Psychiatry and Dual Higher Specialist Training at Herefordshire and Worcestershire Health and Care NHS Trust and Essex

University Partnership NHS Trust. He achieved Full Membership of the Royal College of Psychiatrists (MRCPsych) by examination in 2016. Throughout his training, Dr. Gondhalekar has worked in several hospitals in the Midlands and Essex gaining valuable experience in multiple mental health sub-specialties. He achieved his Certificate of Completion of Specialist Training (CCT) in General Adult and Old Age Psychiatry in 2020. Dr Gondhalekar has served as a Clinical Fellow at the Royal College of Psychiatrists, Centre for Quality Improvement, London between 2017 and 2021. He currently serves on the UK National ECT Accreditation Committee and is one of the External Clinical Advisors for Mental Health at the Parliamentary Health Service Ombudsmen. He currently works as a Consultant Psychiatrist at the North-East London Foundation NHS Trust within Community Old Age Psychiatry, and he has also gained International Experience working for the Auckland District Health Board, New Zealand as a Senior Medical Officer. Dr Gondhalekar also presently works on the prestigious Harley Street in London for a Private Psychiatry Boutique Clinic, Psymplicity Healthcare Ltd. Dr Gondhalekar has served as a Clinical Examiner at the King's College London, School of Medicine. He has also served as an Academic Tutor at the University of Birmingham, School of Medicine, supervising Pre-Clinical and Clinical Medical Students in their 3rd, 4th, and 5th Years.

How Covid-19 Vaccine Dissemination Efforts of Local Independent Pharmacies Addressed Vaccine Hesitancy Among Diverse Groups in The U.S.

Natasha A. Patterson

Public Health, The College of New Jersey, USA

Abstract

Vaccine hesitancy and access are both linked to trust. Local independent pharmacies in the U.S. played a pivotal role in the dissemination of the COVID-19 vaccine and were able to leverage their access to the community and trust. Local pharmacies were already poised to engage the community and expand access to the vaccine. This study seeks to highlight the reemergence of the local independent pharmacies and how they were integrated into the pandemic response plan with public health agencies in reaching elderly and marginalized populations. The study revealed how local independent pharmacies jumped into action, increased social media presence, provided health education and health promotion messages, and increased access to the vaccine. A review of online resources including social media posts from February 2021 through July 2021 was conducted. The social media pages for the local pharmacies were reviewed for information. A literature review of past pandemic/epidemic responses was utilized as background/comparative information. The local independent pharmacies utilized social media pages to reach the public, utilized community spaces like schools and recreation centers to host vaccine dissemination events and leveraged volunteers to make up for not having enough staff. Being located within communities where those with the highest risk but also some hesitation about the vaccine, trust became a key factor in the dissemination process. U.S. based chain pharmacies like CVS, Rite Aid and Walgreens increased the use of technology for vaccine dissemination, which was a barrier to access. Future pandemic preparedness plans should include strategies for including local independent pharmacies and specific tasks and formalizes agreements that outline expectations while providing financial support.



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Biography:

Dr. Natasha Patterson is currently a Professor of Public Health at The College of New Jersey (TCNJ) in Ewing, NJ, teaching health systems and policy, public health leadership, and health education courses for undergraduate and graduate students. Dr. Patterson has been teaching in higher education for over 16 years. Prior to teaching she worked in the field as a Health Educator, Program Coordinator for a community based organization and a Research Program Manager for a world renowned cancer research center. Her current research interests include social justice and health disparities, decriminalization of drug policy, Black maternal morbidity and mortality policy, and COVID-19 vaccine hesitation and distribution. Dr. Patterson's most recent journal publication is entitled: An Examination of US COVID-19 Vaccine Distribution in New Jersey, Pennsylvania, and New York.

The COVID-19 Vaccine Distribution in New Jersey, Pennsylvania, and New York: Lessons Learned From the Early Point of Distribution Sites

Ethan Moss

Public Health, The College of New Jersey, USA

Abstract

December 11th 2020 marked the beginning of one of the most logistical and ethical challenges the U.S. and the world has faced in recent history: efficiently and ethically vaccinating the population against COVID-19 as the FDA issued an EUA for the Pfizer COVID-19 vaccine. In 2020 alone, the CDC recorded 350,000 deaths, approximately 10.4% of all deaths in the US as a direct cause of COVID-19. On December 18th 2020, the EUA for the Moderna COVID-19 Vaccine was issued by the FDA. Despite the unprecedented pace in which these vaccines were created and tested was a testament to the power of modern global science, distributing these vaccines proved to be a challenge. Although the issues were global, researchers focused on New Jersey, New York, and Pennsylvania. In this tri-state area with over 42 million people, on any given day in the early days of vaccine distribution, the same subgroup of the population may have been eligible for a vaccine in one state or city but not the other, and the process for getting a vaccine differed substantially and created mass confusion. Public confusion, stemming from the lack of communication between differing levels of government and to the public, has led to mistrust and vaccine hesitancy especially amongst already marginalized populations. The Federal government released a certain amount of vaccine doses to each state, and each state was to have a plan for efficient and equitable distribution. A compressive review of the literature, historical context, social media, and key informed interviews was used to find key successes and points of improvement in the COVID-19 vaccine rollout. Key findings from the research included a lack of meaningful communication between the federal government/state governments/ and local governments, a failure to account for those with language barriers, lower levels of education, and other social determinants of health including: transportation and access to and understanding of technology. Many PODs sign up sites were online only, hence requiring both reliable internet and an understanding of how to use a computer, further confusing different populations including the elderly. Future point of distribution campaigns must be prepared for by creating standardized EAPs for mass vaccinations that take into account the anticipated lack of supply chain, determine equitable ways of defining at-risk populations, and provide clear steps for registration taking into account vulnerable populations.



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Key Words:

Public Health, COVID-19, Point-of-Distribution, Vaccines

Biography:

Ethan Moss is currently a senior undergraduate student in the 4+1 MPH program at The College of New Jersey with majors in Public Health and Emergency Management and Preparedness. With two years experience at the Princeton and Philadelphia offices of Emergency Management and Department of Health, he focuses on program planning, implementation, and management. As part of his internship he constructed Point of Distribution Plans for COVID-19 vaccine sites, PHAB accreditation dashboard management, and a landscape review of Princeton Municipalities Emergency Operations plan. His research interests are in COVID-19 Response, and Emergency Management resulting in 3 APHA presentations over the last two years. He is an EMT.

Drivers of Routine and Outbreak Vaccination Uptake in the Western Democratic Republic of Congo: An Exploratory Study in Ten Health Zones

Patrick Mutombo Lupola

National Institute of Biomedical Research, Democratic Republic of the Congo

Abstract

Vaccinations are an essential public health intervention, but uptake is often suboptimal due to insufficient demand and supply chain factors. Despite the establishment of national immunization programs in every country, vaccination uptake is often suboptimal due to insufficient demand and supply chain factors. Major infectious disease outbreaks can also disrupt routine health services, leading to a high risk of subsequent outbreaks and aggravating the health and societal impact of a primary outbreak. The ongoing COVID-19 pandemic has illustrated the challenges related to widespread vaccination in sub-Saharan Africa. The Democratic Republic of Congo (DRC) has been prone to outbreaks of multiple vaccine-preventable diseases, and previous Ebola outbreaks have resulted in a drop in routine vaccination uptake, leading to consecutive measles outbreaks. However, surveillance data from Kinshasa suggests that routine vaccination uptake did not decrease during the first six months of the COVID-19 pandemic. A 2020 cross-sectional study among the Democratic Republic of Congo adults also revealed low willingness to vaccinate against COVID-19, particularly among healthcare workers. To enable optimal vaccination impact, it is crucial to have a clear understanding of the determinants of insufficient uptake, both on the demand and supply chain side, by time, place, and person. The study aims to identify promoting and hampering determinants of routine and outbreak vaccination uptake among different stakeholders, including parents of children under five, the elderly population aged 55 years and above, and healthcare workers in different geographical settings.

Biography:

Patrick Mutombo is a highly accomplished data scientist and head of the Data Science Unit, known for his expertise in transforming data into valuable insights. Dr. Mutombo began his career as a Data Manager for Clinical Trials at the Institut National de Recherche Biomédicale (INRB). It was during this time that he developed a passion for working with data and became

increasingly interested in the potential insights that could be gleaned from it. In his current role as the head of the Data Science Unit, Dr. Mutombo oversees a team of talented data scientists and is responsible for driving the organization's data strategy. He is deeply committed to leveraging data to improve patient outcomes and has played a key role in the development of several innovative data-driven initiatives. Despite his many accomplishments, Patrick Mutombo remains committed to continuous learning and is constantly seeking out new ways to stay ahead of the curve in the rapidly evolving field of data science.

Steps towards Developing a Universal Influenza Vaccine

Suresh K. Mittal

Purdue University, USA

Abstract

While candidate vaccines can be made for individual influenza strains, preparing vaccine stocks for each potential pandemic virus is impractical. Moreover, the nature of the pandemic influenza virus will be known during the pandemic. Therefore, it will be practical to develop a universal influenza vaccine that could confer adequate protection against seasonal influenza A viruses (H1N1 and H3N2) as well as potential pandemic avian influenza A viruses (H5N1, H7N7, H7N9, and H9N2). Influenza vaccines expressing hemagglutinin (HA), neuraminidase (NA), nucleoprotein (NP) matrix protein 1 (M1), or immunogenic domains or epitopes have been developed and showed potential in providing significant protection against influenza viruses in experimental animals or human clinical trials.

We targeted the conserved influenza domains, including the stem region of HA (HA2) and the ectodomain of matrix protein 2 (M2e), and evaluated their roles in developing a broadly protective influenza vaccine. The prime-boost immunization of mice with bovine and human Adenovirus (Ad) vectors showed a comparable increase in the expression of interferon-gamma (IFN- γ) and interleukin 2 (IL-2) in splenocytes, mediastinal lymph node cells, and lung lymphocytes, indicating the development of HA2-specific cellular immunity. Besides, the comparable antibody level against HA was shown in all the candidate vaccines, signifying the induction of humoral immunity. However, immunization and challenge studies demonstrated only partial protection.

NP, a relatively conserved internal protein of influenza viruses, is the target for the heterosubtypic immunity conferred by CD8⁺ cytotoxic T lymphocytes (CTLs). To further enhance the T cell immunity of NP, 22 amino acid residues Autophagy-Inducing Peptide (AIP) C5 (AIP-C5) from the CFP10 protein of *Mycobacterium tuberculosis* was used. Mice were immunized intranasally (i.n.) with human Ad (HAd) vectors, HAd-C5-NP(H7N9) or HAd-NP(H7N9), expressing NP of an H7N9 influenza virus with or without the AIP-C5, respectively. Both vaccines developed similar levels of NP-specific systemic and mucosal antibody titers; however, there was a significantly higher number of NP-specific IFN- γ -secreting CD8 T cells in the HAd-C5-NP(H7N9) group compared to the HAd-NP(H7N9) group. The HAd-

C5-NP(H7N9) vaccine provided better protection following the challenge with A/Puerto Rico/8/1934(H1N1), A/HongKong/1/68(H3N2),A/chukkar/MN/149517/1998(H5N2),A/goose/Nebraska/17097/2011 (H7N9), or A/Hong Kong/1073/1999(H9N2) influenza viruses compared to the HAd-NP(H7N9) group. The autophagy transcriptomic gene analysis of the HAd-C5-NP(H7N9) group revealed the upregulation of some genes involved in the positive regulation of the autophagy process. The results support further exploration of NP and AIP-C5 for developing a universal influenza vaccine.

Biography:

He completed his DVM and MS degrees in 1982 and 1984 in India and PhD in virology from the University of Cambridge, U.K.,in 1989.Between 1989 and 1995, He worked with internationally known scientists, initially at McMaster University and subsequently at the Vaccine & Infectious Disease Organization and International Vaccine Center in Canada. He joined Purdue University in 1995 and served as the Interim Head of the Department of Comparative Pathobiology twice (2008-10 and 2016-17).He was promoted to Distinguished Professor of Virology in 2018. He also served as the Infectious Diseases Program Leader for the Purdue Institute of Inflammation, Immunology, and Infectious Disease. He has over 30 years of experience designing human and nonhuman adenoviral vector-based recombinant vaccines. His laboratory is developing the next generation of vaccines for influenza viruses, SARS-CoV-2, and Mycobacterium tuberculosis.

My Personal Pros and Cons of Receiving a Full Face Transplant

Robert Chelsea

Vice President, The Robert Chelsea Foundation, USA

Abstract

We are reaching out to inform more of the public of the importance in becoming a organ-tissue-donor. TIME MAGAZINE, BOSTON GLOBE, USA TODAY, KNBC, KBLA, KABC, LA TIMES, KTLA, WNPR, BBC and others have covered our story but much more can and must be done to overcome the following bias, disparity and adversities.

For example: "Blacks are 13% of USA population and Hispanics are 18%, yet each group exceed 30% of USA candidates for kidney transplants alone" Disparities. I happen to be the first African American to receive a Full Face Transplant, and the oldest Face Recipient in the world (so far).

"If one size doesn't fit all, neither should one cultural or color be a benchmark for everyone" More speaker venues are necessary to inform hospitals, students, researchers, government institutions and the general public in every nation must allow more dialog of the common adversities associated with disabilities and infections commensurate with transplantation

Biography:

He Grew up in Los Angeles CA, worked with high tech companies from IBM to Self-employed. He privileged to have one daughter name Ebony. August 2013 a car accident caused by a drunk driver lead him to become a Burn Survivor, Amputee and subsequently a Face Transplant Recipient in July 2019. After surviving a coma for 6 months and Hospital stays for approximately 18 months, The Robert Chelsea Foundation was created. In 2018 they started out providing information, and encouragement to burn survivors and the overall disabled diaspora; Today RCF speaks to Hospitals, Schools, Universities and Local organizations of the awesome career opportunities for students, researchers and individuals of the importance of becoming an organ tissue donor.

Nanotechnology in the Diagnosis, Treatment & Vaccination of Covid -19

Suma Alluri

Avalon University School of Medicine Curacao, Netherlands Antilles

Abstract

Polymeric, inorganic self-assembling materials and peptide-based nano particles are promising tools for battling COVID-19 as well as its rapid diagnosis. COVID-19, as an emerging infectious disease, has caused significant mortality and morbidity along with socio economic impact. Nanotechnology should be strongly considered to tackle this virus. Several strategies have been proposed to design and fabricate effective diagnostic and therapeutic agents against COVID-19 by the aid of nanotechnology.

To date, platforms based on nanotechnology have been effective in preclinical studies toward viral pathogens including such respiratory viruses, herpes simplex, human papilloma virus and HIV.

Nanotechnology-based techniques can be used to combat COVID-19 pandemics in different ways including development of a sensitive, rapid and specific diagnostic tool for COVID-19, the use of nano materials to deliver antiviral agents, improving contact tracing tools, coating of nanomaterial surfaces to inactivate the virus and preparing effective environmental disinfectants. Antiviral agents interfere at certain stages of the virus replication cycle to prevent them from occurring, unlike vaccines which are used to boost the human immune system.

Nanomaterials are capable of changing the pharmacokinetic properties of the encapsulated drug and via controlled release mechanism, they can reduce the required concentration of drug. Moreover, the antiviral effects of the established nano-drug can be improved by binding a specific ligand to the surface of the nanoparticle containing the drug for recognition of molecular components of the target tissue/organ.

For image based and clinical diagnostic of COVID-19, nanomaterials are emerging as promising substrates because of their unique optical, electronic, magnetic, and mechanical properties.

Nanomaterials that have been proposed for viral detection include metal, silica, and polymeric nanoparticles, quantum dots, and carbon nanotubes.

The development of nano-biosensors and nanoparticle-based vaccines and medicines has opened a new path toward better management of the coronavirus disease 2019 (COVID19)

pandemic.

My presentation will focus on various Nanotechnology-based techniques in COVID-19 vaccines, specific diagnostic tools and therapeutic agents by the aid of nanotechnology.

Biography:

Dr. Suma Alluri Graduating with a degree in medicine from Yerevan State Medical University, Dr. Suma completed her internship at Osmania Medical College & Hospital. After completing her education, Dr. Suma served a short service commission as a medical officer in AMC (the Indian Army). To complement her degree in medicine, Dr. Suma possesses a Masters in Pathology, a Diploma in Clinical Pathology and a Master's in Hospital Management. Dr. Suma joined Avalon University 4 years ago. She is a Professor of Pathology in the Department of Diseases, Immunity & Therapeutics (DIT). With her, she brings more than a decade of experience in teaching Pathology to medical students in many prestigious medical colleges recognized by the National Medical Council in India in the capacity of a PG-tutor, Senior Resident & Assistant Professor. Currently, Dr. Suma, along with instructing Avalon's MD3 & MD4 students in Systemic Pathology through the use of lectures & labs for DIT1 & DIT2 courses, teaches Introduction to Histology for Pre-Med Students as well.

Intracellular Autolytic Vaccine in Preventing Colonization of Pathogenic Salmonella

Debabrata Biswas

University of Maryland, USA

Abstract

Salmonella enterica is one of the major zoonotic pathogens causing human foodborne disease. More than 1.2 million people are annually infected with Salmonella in the US, causing 23,000 hospitalizations and 450 deaths. The development of efficient vaccine is urgent to prevent Salmonella infection, known as salmonellosis. As chicken is the major reservoir of *S. enterica*, control of colonization of *S. enterica* in chicken is the best way to reduce salmonellosis which relieves the huge burden for medical cost. The purpose of this study is to develop an intracellular autolytic Salmonella enterica serovar Typhimurium strain, and to evaluate its effectiveness on poultry gut Salmonella colonization.

Bacteriophage genes from Salmonella enterica serovar Typhimurium were integrated into non-pathogenic *S. Typhimurium* strain for autolysis under intracellular conditions. Interaction of the vaccine strain (STLT2 INC-ATL) with host cells was evaluated using chicken macrophage cell line (HD11). One-day-old chicks were orally given STLT2 INC-ATLY for immunization, followed by pathogenic Salmonella challenge. Cytokine expressions in chicken serum were examined by quantitative PCR and enzyme-linked immuno-sorbant assay. Intestinal microbial genomic DNA was compared using 16S rRNA sequencing on Illumina MiSeq system for microbiome analysis.

We found that the intracellular viability of STLT2 INC-ATLY in HD11 cells was reduced by ~94% ($p < 0.05$). Vaccination of STLT2 INC-ATLY in chicken successfully prevented ($p < 0.05$) the follow-up induced *S. Typhimurium* colonization in cecum, jejunum, and ileum; meanwhile, the total Salmonella intestinal colonization was significantly reduced ($p < 0.05$) by ~1.5 log. The expressions of IL-1 β , IL-6, IL-8, IL-10, IL-12, IL-18, LITAF, iNOS, TNF- α , TLR3, and TLR7 were significantly enhanced by various folds ($p < 0.05$). STLT2 INC-ATLY also induced insignificant alteration of intestinal microbial composition while decreasing the abundance of Proteobacteria, especially Salmonella.

In conclusion, this intracellular autolysis Salmonella vaccine (STLT2-INC-ATL) can be a promising candidate to vaccinate chicken for reducing or preventing the risk of Salmonella contamination in poultry products/environments and controlling salmonellosis in human.

Biography:

As a bacteriologist, Dr. Biswas has committed to develop crosscutting research programs for targeting mechanism and control of bacterial infection. He investigates the role of natural products in control of food borne bacterial colonization in animals & mechanism of antimicrobial activity of these components. Dr. Biswas's team has also investigated the effective natural organic products such as a function bioactive extracts from fruit byproducts for alternative source of therapeutic and sub-therapeutic (growth promoter) antimicrobial components for organic and conventional poultry production. His research focuses on the reduction of the colonization of foodborne bacterial pathogens in the intestine of farm animals, specifically poultry, by using pre-biotics, probiotics, and/or its combination (symbiotic) as well as developing vaccine by generating genetically engineered bacteria.

To Determine the Existence of Violence Over Healthcare Workers

Dragica Andreevska Shuleva

University of Montenegro, Macedonia

Abstract

Violence, whether a group or individual behavior, is considered a deviation. It's one of the leading health – work problems, and its growing. The definition of violence depends on the point of view, so it could be a legal or a social problem. Violence comes in many shapes and sizes. There are some known types of violent behavior: domestic violence, bullying etc. This research is based on workplace violence. As a form of violent behavior, it can be noticed in different professions involving communication. The main topic of this research is violent behavior in the healthcare system. By the nature of it violence can be physical, psychological, sexual etc. The definition of violence by the World Healthcare Organization goes: Intentional use of physical power, by threatening someone, and end with certain consequences.

Keywords:

Violence, Healthcare workers, Doctor

Biography:

Dragica Andreevska Shuleva is a medical doctor /general practice in Public Health Department Skopje Macedonia from 1997-2007. She is a GP trainee in Medical faculty Podgorica-University of Montenegro. She is also a family physician in Public Health department Bar-Montenegro since 2017. She participated in National poster Presentation on the I Conference Family medicine Montenegro 2015 Oedema Quinke in ACE inhibitors-allergy . National Poster Presentation on the II Conference Family Medicine Montenegro 2017 Haemorrhagia subarachnoidales. International Poster presentation Banja Luka RS 2010 Congress of sports and medicine

Lipid Nanoparticle-Based Vaccines: PEG or Non-PEG for Allergic Reactions?

Zhaohua Zhou
CDER/FDA, USA

Abstract

Lipid nanoparticle (LNP)-based drug delivery systems have demonstrated remarkable success in improving the effectiveness and safety of therapeutic agents. However, concerns have emerged regarding their potential to cause adverse events (AEs), with anaphylaxis being one of the most severe and life-threatening reactions reported. Anaphylaxis associated with LNPs has garnered significant attention, prompting investigations into the underlying causes and potential strategies for mitigation.

Polyethylene glycol (PEG), a common component in LNPs, has been suggested as a major contributor to LNP-related anaphylaxis. Clinical and laboratory evidence has confirmed the role of PEG in inducing type 1 hypersensitivity reactions, particularly in PEGylated therapeutics and PEG-containing formulations. However, the involvement of PEG immunogenicity in mRNA/LNP-based COVID-19 vaccines remains controversial, with conflicting reports and inconsistent findings.

This presentation aims to review the current scientific literature and critically analyze the evidence concerning PEG's contribution to anaphylaxis reactions associated with LNPs. The speaker will discuss studies investigating PEG immunogenicity, including the presence of anti-PEG antibodies, and their potential correlation with anaphylactic events. Furthermore, the talk will explore the exploration of novel biomarkers to differentiate the causes of anaphylaxis, assessing whether PEG or non-PEG components of LNPs are responsible.

Understanding the underlying mechanisms of LNP-associated anaphylaxis is crucial for ensuring the safety and effectiveness of future LNP-based drug formulations and vaccines. By shedding light on the potential role of PEG immunogenicity and its association with adverse reactions, this presentation aims to contribute to the ongoing discussions surrounding LNP safety, facilitating the development of safer and more effective drug delivery systems.

Biography:

Zhaohua (Joe) Zhou, Ph.D., is a Research/Review Scientist at the Office of Biotechnology Products, CDER, US Food & Drug Administration. Dr. Zhou's research focuses on the development of laboratory models for the identification and prediction of drug-induced acute allergic reactions. His research methods encompass the current understanding of the mechanisms underlying clinical anaphylaxis, including:

- Drug-specific IgE screening and in vitro Type 1 sensitization model: This involves the detection of drug-binding antibodies and mast cell degranulation to assess the presence of drug-specific IgE.
- Drug-specific IgG/IgM screening followed by complement activation assay: Dr. Zhou investigates the classical and non-classical pathways of complement activation to generate anaphylatoxins (C3a, C4a, and C5a) through the screening of drug-specific IgG/IgM.
- Mast cell degranulation assay: Dr. Zhou directly evaluates mast cell degranulation, which is a key event in allergic reactions.
- Cytokine storm assay: This assay involves the activation of T cells and macrophages using peripheral blood mononuclear cells (PBMC) or whole blood culture to assess the release of cytokines, providing insights into the immune response.
- Contact system (kinin/kallikrein) activation assay: Dr. Zhou investigates the activation of the contact system, specifically the kinin/kallikrein pathway, which plays a role in allergic reactions.

By utilizing these comprehensive models, Dr. Zhou can efficiently determine whether drug quality is a contributing factor to allergic reactions and predict patient sensitivity to specific therapeutics. Additionally, Dr. Zhou possesses regulatory expertise in the FDA, including Biotherapeutic CMC assessment and immunogenicity method assessment.

Factors Hindering Utilization of Student Centered Teaching Methods by Tutors and Clinical Instructors in Nursing Schools in Jinja District, Uganda

Keren Carol Drateru

Health Tutors College Mulago, Uganda

Abstract

Introduction

The study entitled “factors hindering utilization of student centered teaching methods by tutors in nursing schools was conducted in three Nursing Schools located in Jinja District. The tutors had a mean age of 32 with a SD of 0.689. They were both female and male, with varying teaching qualification some having BME, HTD and others none. All Tutors had at least qualified with different health related qualifications.

Purpose:

The main purpose of the study was to assess factors hindering utilization of student centered teaching methods by tutors in nursing training schools in Jinja district and the specific objectives were to determine the tutor related factors, to identify institutional related factors and to establish perception of tutors about student related factors hindering utilization of student centered teaching methods by tutors of nursing training schools in Jinja District.

Methodology:

A quantitative approach using a cross sectional design was used to gather factors that hinder utilization of student centered teaching methods among 52 Tutors teaching at Jinja school of Nursing and Midwifery, International institute of health sciences and St. Eliza School of nursing and midwifery. The sample size was determined by Krejcie and Morgan (1970) method and was recruited for the study through simple random sampling procedure. Data was obtained by using questionnaire then cleaned and analyzed by SPSS version 20.

Results:

Majority of the respondents 41(78.8%) had heard about SCTM and the rest 11(12.2%) had never heard anything about SCTM. Regarding the preference for the stated utilization, 12(29.3%) cited that it takes time to prepare their work if SCTM are to be used in a lesson. 40(76.9%) disagreed that tutor authority could be deprived when SCTM are used. 46(88.5%) of the respondents declared that the school Principal supported them regarding teaching methods

and 31 (59.6%) tutors agreed that library did not adequately provide enough reading material. Regarding emphasis put on SCTM by the school authority, the respondents had mixed reaction with 15 (28%) being somehow satisfied, 11 (21.2%) were neither satisfied nor dissatisfied and 8 (15.4%) being totally dissatisfied.

Conclusion:

Scanty knowledge of tutors coupled with lack of time for preparation, lack of tutor authority, and support from principal, inadequately stocked library and mixed reactions of satisfaction significantly hindered utilization of SCTM.

Biography:

Dr. Keren Carol Drateru has her expertise in handling students and passion in teaching nursing students. Her interest is to produce competent and quality nurses as a work force human resource for the nation to work in the various health facilities and also to improve the educational standard of Nursing in the country as a whole. Her positive attitude towards nursing education has seen her getting involved in teaching and participating in several nursing projects in order to improve the quality of nursing education in her country. Her commitment is seen by her gradual rise in the profession, having started as a Registered Nurse, worked in different health facilities and health training institutions as a Health tutor, she upgraded to Bachelors in Nursing Science, and to date she holds a PhD in nursing philosophy from Texila American University.

Post-Eradication Smallpox Vaccine as a Candidate for Mpox (Monkey pox) Vaccine

Shelia M. Malone,
Jackson State University, USA

Abstract

Background:

Globally, the majority of cases of mpox were reported in the Region of the Americas. Limited data on vaccine effectiveness in the current mpox outbreak are available. However, the modified vaccinia virus (smallpox vaccine) has been predicted to prevent or reduce the severity of the mpox infection.

Purpose:

This systematic review and meta-analysis of randomized clinical trials aimed to evaluate the modified vaccinia vaccine's safety and efficacy for protection against mpox.

Methodology: Following guidelines from the Cochrane Collaboration and prisma, multiple databases including Pub Med, Plos one, Google Scholar, British Medical Journal, and the U. S. National Library of Medicine were searched. Out of 13,294 research articles initially identified, 187 research articles were screened after removing duplicates. Following the inclusion and exclusion criteria, the meta-analysis included ten studies with 7481 patients. Three researchers independently assessed the risk of bias in the included study.

Results:

The pooled results suggest that the vaccinia-exposed group had fewer side effects when compared to the vaccinia naïve group. (Odds ratio: 1.66 95% CI: 1.07-2.57; P=0.03).

Conclusions: Overall, the modified vaccinias have proven safe and effective in both vaccinia naïve and previously exposed groups, with a higher efficacy in the previously exposed groups.

Keywords:

Vaccine; monkey pox; smallpox; vaccinia; safety; efficacy

Biography:

Dr. Malone has years of experience conducting epidemiological research studies, meta-analyses of clinical research, and rural health studies. Her research interests focus on infectious diseases and cardiovascular disease in rural and underserved populations. Her background includes researching social determinants of cardiovascular disease prevalence to add to the body of knowledge generated by the Jackson Heart Study. She is trained in clinical research protocol and behavioral and epidemiological studies.

The Vital Importance of Using Data in the Management of Primary Care Units in Brazil

Dario Brito Calcada

State University of Piaui, Brazil

Abstract

Efficient management of primary care units (PCUs) is essential to provide accessible and quality healthcare services to the population. In the Brazilian context, the use of data has emerged as a fundamental tool to enhance decision-making, optimize resources, and improve the quality of care provided in PCUs. This research explores the growing importance of data usage in the management of PCUs in Brazil, highlighting how information analysis can transform healthcare delivery. Primary Care Units play a crucial role in the Brazilian healthcare system, serving as the entry point for healthcare services and focusing on prevention, promotion, and initial treatment. However, managing these units effectively is a complex challenge due to the diversity of population needs and resource limitations. In this scenario, data usage stands out as a powerful tool to guide decision-making and improve resource allocation. There are several advantages to data usage in PCU management, including: i) informed decision-making, as the use of data collected from electronic health records and other sources allows managers to have a detailed view of the health conditions of the served population, identifying patterns and trends. This enables informed decision-making, such as prioritizing service areas and allocating resources according to real needs; ii) performance monitoring, as data analysis helps evaluate PCU performance by measuring key indicators of quality, efficiency, and patient satisfaction. This identifies areas that need improvement and implements strategies to optimize unit operations; iii) demand forecasting, whereby based on historical patterns and demographic data, it is possible to predict future healthcare service demands. This enables more effective planning, ensuring that PCUs are prepared to handle seasonal increases or unexpected events; iv) health program monitoring, as many PCUs are involved in specific health programs such as vaccination, chronic disease control, and maternal-child care. Data usage facilitates program tracking, identifying successful areas and improvement opportunities; and v) patient engagement, where data collection and analysis can also be used to involve patients in their own care. By providing personalized information about their health conditions and recommendations, patients can be empowered to take proactive measures to improve their health. Despite the evident advantages, data usage in PCU management in Brazil faces challenges such as patient privacy assurance and the quality of collected information. Implementing robust data protection systems and training healthcare professionals for the correct data utilization are crucial steps. The use of data in managing primary care units in

Brazil is becoming increasingly essential to enhance the efficiency, quality, and impact of provided healthcare services. Intelligent information analysis empowers managers to make more informed decisions, strategically allocate resources, and ultimately provide more effective and patient-centered healthcare. However, addressing the technical and ethical challenges related to data usage is essential to ensure that benefits are maximized and risks are minimized.

Keywords:

Association Rules Networks, Childhood Vaccinations, Pattern Recognition, Public Health.

Biography:

PhD in Computing and Computational Mathematics from the University of São Paulo (USP) at the Institute of Mathematics and Computing Sciences (ICMC). Master in Biotechnology from the Federal University of Piauí with emphasis on Computational Intelligence applied to nanotechnology and biotechnology. Bachelor in Computer Science from the State University of Piauí. He has been a professor since 1998 and has experience in the area of Computer Science, as well as Mathematics and Physics. He acted as a mathematics and physics teacher in pre-university courses. He is currently an effective professor at the State University of Piauí with research and extension projects in the areas of Computational Intelligence Applied to Health, Data and Text Mining and Data Sciences, in addition to Social Projects with the "Luz da Esperança" Social Works.

The Use of Artificial Intelligence to Aid Decision-Making in Health Care

Igor Leandro

State University of Piauí, Brazil

Abstract

This article presents a comprehensive overview of a groundbreaking research study focusing on the integration of artificial intelligence (AI) in healthcare decision-making and management processes. The research aims to harness the potential of AI to improve patient care, optimize resource allocation, and enhance overall healthcare management. The study employed a mixed-methods approach, combining both qualitative and quantitative data collection techniques. Researchers gathered large datasets from various healthcare facilities, including patient records, treatment outcomes, and operational data. They also conducted interviews and surveys with healthcare professionals and administrators to gauge their perspectives on the potential impact of AI in decision-making processes. A range of AI algorithms was utilized in the research, including machine learning, natural language processing (NLP), and deep learning models. Machine learning algorithms were deployed to analyze patient data and identify patterns in disease progression, treatment responses, and potential risk factors. NLP was applied to extract valuable insights from unstructured data, such as medical notes and research papers. Additionally, deep learning models were utilized to predict patient outcomes based on various parameters. The integration of AI in healthcare decision-making processes exhibited significant advantages. AI-powered decision support systems facilitated accurate and timely diagnoses, enabling healthcare professionals to design personalized treatment plans based on a patient's unique characteristics. Additionally, AI algorithms helped identify potential adverse events and early warning signs, enhancing patient safety and reducing preventable medical errors. In healthcare management, AI demonstrated remarkable potential for optimizing resource allocation and operational efficiency. AI-driven systems analyzed patient flow and demand patterns, allowing hospitals to allocate resources more effectively and reduce waiting times. Furthermore, predictive analytics assisted in inventory management, ensuring a consistent supply of medical equipment and medications. Despite the promising outcomes, the research also identified some challenges and ethical considerations associated with AI implementation in healthcare. Issues such as data privacy, transparency of algorithms, and bias mitigation were highlighted as crucial areas for improvement. Ensuring AI systems are fair and equitable and gaining the trust of healthcare professionals and patients remain essential for successful AI integration. In conclusion, this research highlights the potential of AI in revolutionizing healthcare decision-making and management. The findings underscore the importance of

continued efforts to develop robust and ethically sound AI systems for enhancing patient care and healthcare efficiency. As technology continues to evolve, the successful integration of AI in healthcare holds the promise of transforming the industry and positively impacting millions of lives.

Keywords:

Artificial Intelligence, Association Rules Networks, Decision-making, Health Care.

Biography:

PhD in Computing and Computational Mathematics from the University of São Paulo (USP) at the Institute of Mathematics and Computing Sciences (ICMC). Master in Biotechnology from the Federal University of Piauí with emphasis on Computational Intelligence applied to nanotechnology and biotechnology. Bachelor in Computer Science from the State University of Piauí. He has been a professor since 1998 and has experience in the area of Computer Science, as well as Mathematics and Physics. He acted as a professor of mathematics and physics in pre-university courses. He is currently a professor at the State University of Piauí with research and extension projects in the areas of Computational Intelligence Applied to Health and Agricultural Sciences, Data Mining and Text and Data Sciences, in addition to Social Projects with the Luz da Esperança Social Works.

The Effect of Chronic Pain on Mental Health

Ihuoma Marvelous Udeagha

West Virginia University, USA

Abstract

Chronic pain, the reason why many adults seek medical help, has not only been linked to just significant medical conditions and disabilities but also to multiple mental health disorders including increased stress levels, anxiety, depression, fatigue, insomnia, post-traumatic stress disorders (PTSD), as well as suicidal ideations and suicide. Chronic pain has also been linked to increased use of illegal drugs, substance use, and substance abuse. The effects of chronic pain on mental cannot be underestimated. In the United States, chronic pain reportedly impacts millions of people. According to the American Psychiatric Association (2020), chronic pain and mental health disorders often occur together. Many of the pain patients with chronic pain also reported mental health disorder symptoms including anxiety, depression, and other mental health related disorders. Most recent research and report by Mental health America, (2020) shows that many American adults reported a link between their chronic pain and anxiety, depression, bipolar, and PTSD. This paper therefore tries to explore the effects of chronic pain and mental health.

Biography:

Dr. Udeagha is an experienced Spine and Pain Specialist with a demonstrated history of working in the hospital & health care industry. She is a strong, highly skilled healthcare service professional with special interests in integrating Interventional Spine and Pain Management, Education, Psychiatry and Mental Health issues. Dr. Udeagha currently works for the WVU Medicine Brain and Spine, Department of Neurosurgery, Rockefeller Neuroscience Institute, WV.

Oral Noro Virus Tablet Vaccine Elicits Robust Systemic and Mucosal Responses in Elderly Adults

Colin Lester

Vaxart Inc., USA

Abstract

Background:

Norovirus (NV) is a leading cause of acute gastroenteritis worldwide and can cause fatal outcomes in the elderly population. Currently no licensed vaccines are available that prevent NV infection. We have developed an enterically delivered non-replicating adenoviral vector vaccine (VXA-G1.1-NN) engineered to express G1.1 VP1 in the small intestine. Here we report safety and immunogenicity results of a double-blind, placebo-controlled clinical trial investigating dose escalation of VXA-G1.1-NN in elderly adults.

Methods:

Sixty-six volunteers ages 55-80 were administered oral VXA-G1.1-NN tablets by prime and boost twenty-nine days apart. Three cohorts were enrolled to ascertain the safety and immunogenicity of dose escalation. Solicited symptoms (SS) and adverse events (AE) were recorded for 28 days following each immunization. To determine systemic humoral immunogenicity, VP1-specific serum IgG and IgA were evaluated by MSD and functional activity determined by BT50. Cellular immunity was measured by antibody secreting cell (ASC) assays and B cell immunophenotyping from cryopreserved PBMCs. Lastly, VP1-specific mucosal IgA responses were quantified in subject saliva and nasal samples and normalized to total IgA.

Results:

VXA-G1.1-NN was well tolerated in all groups, with few reported SS in either vaccine or placebo cohorts. Nominal AE were recorded with none reported in those receiving the highest dose. In the cohorts receiving vaccine, serum BT50 titers, VP1-specific IgG and VP1-specific IgA all increased in a dose-dependent manner and remained above baseline levels through day 210 post vaccination. All vaccine groups elicited strong IgA ASC responses, with the highest vaccine dose generating the most robust responses. Circulating IgA⁺ B cell plasmablasts also significantly elevated a marker of mucosal homing.

Lastly, elevated VP1-specific IgA was detected in the saliva and nasal secretions 29 days post immunization, demonstrating this enterically administered NV vaccine induces mucosal crosstalk in multiple tissues.

Conclusion:

VXA-G1.1-NN was safe, well-tolerated, and induced both systemic and mucosal immune responses in elderly adults. These findings are comparable to adults ages 18-55, demonstrating this vaccine retains potency in the elderly. Lastly, we established that this oral tablet vaccine can elicit antigen-specific IgA at multiple mucosal sites, which may enhance protective efficacy against NV infection.

Biography:

Colin Lester is an Associate Scientist at Vaxart Inc., working on research and development of orally delivered recombinant adenovirus type 5 vectored vaccines. He has expertise in mucosal immunology and in vitro modelling systems. Colin received a Bachelor of Science in Materials Science and Engineering at the University of Washington, with a focus on Nanoscience and Molecular Engineering. During this time, Colin worked in the laboratory of Dr. Miqin Zhang investigating three-dimensional glioblastoma modeling through the use of chitosan-based porous scaffolds. Following graduation from his undergraduate program, Colin began working at Vaxart to evaluate immunogenicity elicited by oral vaccination against norovirus and SARS-CoV-2 in clinical trials. He has contributed to SARS-CoV-2 NHP challenge models, and clinical analytics for both phase I and phase II clinical trials. His subsequent work involved developing an in vitro model with intestinal cell lines to screen transgene presentation efficacy of newly developed rAd5 constructs. Currently Colin is working on an extension of his previous in vitro modeling work, utilizing patient-derived human intestinal organoids that partially recapitulate the cell types and activity of ileum tissue in a clinical setting. His development of a more advanced intestinal tissue model is used for projects on two fronts – to evaluate efficacy of rAd5 constructs in pre-clinical research and development, and to detect neutralizing antibody activity elicited by oral vaccination against norovirus in clinical trials.

Novel Multivalent Vaccines against Clostridioides Difficile Infection

Xingmin Sun

University of South Florida, USA

Abstract

Clostridioides difficile is a Gram-positive, spore-forming and toxin-producing anaerobic bacterium. It is the most common cause of nosocomial antibiotic-associated diarrhea and the etiologic agent of life-threatening pseudomembranous colitis in the developed world. *C. difficile* is intrinsically resistant to many antibiotics, limiting treatment options. Currently, very limited antibiotics are available for the treatment of *C. difficile* infection (CDI), and none of them is fully effective with a recurrence rate of 15-35%. CDI symptoms range from diarrhea to intestinal inflammation/lesion and death and are mainly caused by two exotoxins TcdA and TcdB. Active vaccination provides the attractive opportunity to prevent CDI and recurrence. No vaccine against CDI is currently licensed. We have developed effective multivalent mucosal and parenteral vaccines targeting both *C. difficile* toxins and colonization.

Biography:

Dr. Sun is an Associate Professor with tenure in the Department of Molecular Medicine, College of Medicine at the University of South Florida (USF). He holds courtesy appointments in the Department of Internal Medicine, Department of Cell Biology, Microbiology & Molecular Biology, Department of Chemistry at USF, and USF Genomics. He received his PhD in Natural Sciences from the University of Kiel, Germany, and his Master Degree in Veterinary Microbiology and Immunology from the Nanjing Agricultural University, China. He received his postdoctoral training in Molecular Microbiology and Biochemistry at Brown University, USA. The research in his laboratory is focused on the pathogenesis of *Clostridioides difficile* and the development of novel therapeutics including vaccines to prevent / treat *C. difficile* infection (CDI). He was an NIH (National Institutes of Health) Career Development K01 Awardees. His laboratory has been continuously supported by the NIH. He has been actively serving NIH study section panels including chairing the NIH study section panel in 2020. He serves as an Associate Editor for "Molecular Medicine", Associate topic editor for "Frontiers in Microbiology", and editorial boards for "Infection and Immunity" and "Applied and Environmental Microbiology". He received Tufts Institute for Innovation Inaugural Award in 2014. In 2018, he was awarded "Faculty Outstanding Research Achievement Award" at USF. In 2019, he was awarded "Excellence in Innovation Award" at USF. He chaired the Research Committee of College of Medicine at USF from 2019 to 2020. Currently, he serves as the Vice President for the USF Chapter, National Academy of Inventors, USA.

The Contested Market of Plasma

Jean Mercier Ythier

University of Paris, France

Abstract

Voluntary, anonymous free gift-giving has become nowadays the dominant norm for blood donation for transfusion purposes, in view of its established ability to satisfy the needs in labile blood products in satisfactory conditions of safety and cost. But the economy of blood products is also the place of one of the main exceptions to the principle of non-commercialization of body parts. We show that there exists a genuine international plasma market, which provides the raw materials for the production of blood protein products by pharmaceutical industries. The recent years have seen a considerable strengthening of the massive and globalized features of this market. We briefly describe the issues that this evolution raises, and we sketch some directions for a partial resolution of them. We notably explain why the development of contract fractionation appears both possible and desirable from an economic perspective in the present context.

Biography:

Jean Mercier Ythier is professor of economics at the University of Paris-Panthéon-Assas, France. He graduated from the Institute of Political Studies of Paris (PhD, 1989). He was also a graduate student at Harvard University (1986-87). He went notably through positions of invited research fellow at the University of Montréal (Québec, Canada), assistant professor and associate professor of economics at the University of Paris Panthéon-Sorbonne and professor of economics at the University of Lorraine (France). Prof. Jean Mercier Ythier's research interests include the theory of general competitive equilibrium, microeconomic theory, public economic theory, economic philosophy, altruism, ethics, and topics of economic anthropology.

Characteristics Inhibition Defects of Children with Developmental Dyscalculia: Evidence from the ERP

Enguo Wang

Henan University, China

Abstract

Developmental dyscalculia is a learning disability, especially with mathematics learning ability or lack of relevant skills and lead to mathematics achievement significantly lag behind peers. The lack of digital processing ability in children with developmental dyscalculia may be an obvious symptom of deep cognitive processing defects. In this study, we used event-related potential technology to explore the negative priming effects in children with developmental dyscalculia and in a group of healthy children. Behavioral data indicated that the variation trend of average response time of both groups was consistent under priming and controlled conditions. Developmental dyscalculia and the control group showed a significant negative priming effect. However, the magnitude of the negative priming effect was significantly different between the two groups, with the magnitude being significantly higher in the control group than that in the developmental dyscalculia group. For the ERP main components, P100, P200 and P300 amplitudes of the control group in some electrodes were significantly larger than that of the dyscalculia group. At the same time, the dyscalculia group N100 and P300 latency were significantly delayed in some electrodes than the control group. These results indicated that there were characteristics inhibition defects in children with developmental dyscalculia. Inhibition defects might be the underlying cause of the development of digital processing ability of children with developmental dyscalculia.

Keyword:

Characteristics Inhibition; Negative Priming Effect; Developmental Dyscalculia

Biography:

Wang Enguo, male, born in October 1966, Hua County, Henan province. He is currently the doctoral supervisor of Henan University, the distinguished professor of Henan Province, the deputy director of the Key Laboratory of Psychology and Behavior of Henan Province, the academic and technical leader of The Education Department of Henan Province, and the outstanding scholar of philosophy and social sciences of Henan Province. Chinese psychologist accredited by The Chinese Psychological Society, Director of the General and Experimental Psychology Society of the Chinese Psychological Society, His work has been published in *Research in Developmental Disabilities*, *Journal of Learning Disabilities*, *Journal of Neurology and Neurology Neuroscience* has published 20 papers in SSCI and SCI high-impact factor journals, more than 60 papers in Chinese authoritative journals.