Assessing geographic variability in vaccination rates by VISNs will create the potential to generate targeted interventions within an existing VHA framework.

115

Interactive data displays for rapid responses to COVID-19 response in K-12 schools

Douglas Ezra Morrison[1], Gareth Parry[2], Vladimir Manuel[3], Tony Kuo[4] and Moira Inkelas[5]

[1]University of California, Los Angeles, [2]Department of Plastic & Oral Surgery, Boston Children's Hospital, [3]Population Health Program, UCLA Clinical and Translational Science Institute; Department of Family Medicine, UCLA David Geffen School of Medicine, [4]Population Health Program, UCLA Clinical and Translational Science Institute; Department of Family Medicine, UCLA David Geffen School of Medicine; Department of Epidemiology, UCLA Fielding School of Public Health and [5]Population Health Program, UCLA Clinical and Translational Science Institute; Department of Health Policy and Management, UCLA Fielding School of Public Health

OBJECTIVES/GOALS: A UCLA Clinical and Translational Science Institute (CTSI) science team partnered with the second largest US school district, with over 500,000 K-12 students, to design and implement a statistical process control dashboard to guide COVID-19 response, including mitigation and vaccination outreach. METHODS/STUDY POPULATION: District data for students, teachers, and staff are updated daily and include COVID-19 test results, counts of quarantine after positive tests, and COVID-19 vaccination rates. Displays used a new hybrid Shewhart control chart to detect changes in test positivity rates and distinguish meaningful signals from noise (random day-to-day variation). The dashboard uses the Shiny and plotly packages in R to display interactive graphs of each data stream (cases, tests, and vaccinations) charted at multiple levels (districtwide, subdistricts, schools). Displays of variation over time show policy impacts and inequities. Selected displays use municipal COVID-19 data to complement district data. RESULTS/ANTICIPATED RESULTS: The district has used the displays to assess the impact of their COVID-19 response and to identify variation in close to real-time to suggest areas with need for additional resources for mitigation or vaccination. The CTSI team has continued to edit and add displays in response to the district's changing operational needs and questions. DISCUSSION/SIGNIFICANCE: The UCLA CTSI team developed and implemented a robust data visualization dashboard to monitor COVID-19 case rates and plan vaccination outreach efforts. Control charts enabled the district to distinguish noise from signal, thereby rapidly identifying when specific parts of the district needed targeted support to achieve equity goals.

116

Determining factors associated with treatment outcomes in patients with shoulder arthritis

Christopher Anigwe[1], Drew A. Lansdown[1], Chaiyanun Vijittrakarnrung[1], Benjamin C. Ma[1] and Brian T. Feeley[1]
[1]University of California, San Francisco

OBJECTIVES/GOALS: For shoulder osteoarthritis (OA), the understanding of the patient-specific factors that determine success of both non-operative and operative treatment options is limited. This study aims to identify key factors associated with the response and the heterogeneity of outcomes for both types of treatment. METHODS/STUDY POPULATION: Patients diagnosed with shoulder OA and treated with either reverse/anatomic total shoulder arthroplasty (rTSA/TSA) or non-operative management at the University of California, San Francisco were enrolled in this study. They were followed for a year to ascertain phenotypic traits and patient-reported outcomes (PROs). Magnetic Resonance Imaging (MRI) was used to calculate the Shoulder Osteoarthritis Severity (SOAS) score, a semi-quantitative global assessment of shoulder OA, and to measure fat fractions of rotator cuff muscles. A Microsoft Kinect camera was used to determine the Reachable Workspace (RWS). Linear regression models were used to assess the associations between baseline demographic and radiographic factors on outcomes related to shoulder function. RESULTS/ANTICIPATED RESULTS: It is anticipated that the pre-operative MRI-based SOAS score will be inversely correlated with the magnitude of improvement in PROs 1 year after rTSA/TSA and non-operative management of shoulder OA for the surgical replacement and non-operative cohorts, respectively. Additionally, the non-operative patients who convert to rTSA/TSA within 1 year of observation will have higher SOAS scores compared to patients who continue with non-operative management. The surgical replacement patients with an infraspinatus fat fraction of more than 5% will have worse shoulder function, as measured by RWS, compared to patients with an infraspinatus fraction less than 5%. DISCUSSION/SIGNIFICANCE: MRI may be a novel technique to better predict prognosis of shoulder OA management. This will allow for the development of appropriate algorithms in the prescription of treatments and may be used to counsel patients regarding their expected outcomes or to recommend alternative treatments.

Evaluation

119

Recruiting rural clinics to participate in an HPV vaccination intervention: protocol for a feasibility study and subsequent effectiveness trial

Nadja A. Vielot[1] and Jennifer S. Smith[2]
[1]MSPH, [2]Department of Epidemiology, University of North Carolina at Chapel Hill

OBJECTIVES/GOALS: Rural teens have lower human papillomavirus (HPV) vaccination rates than urban teens, promoting geographical cervical cancer disparities. Giving HPV vaccination earlier than the recommended 11-12 years might increase vaccination rates. We describe a feasibility study for recruiting rural clinics to participate in early HPV vaccination studies. METHODS/STUDY POPULATION: Leveraging professional contacts, we identified two clinics in North Carolina that serve predominantly rural populations. To assess the feasibility of adapting clinic monitoring systems to promote early vaccination, we requested to review electronic medical records (EMR) to identify the size of the vaccine-eligible patient population, HPV vaccination coverage, and the accuracy of EMR queries to monitor HPV vaccination status. Next, we completed in-depth interviews with clinic staff to collect insights on perceived advantages and disadvantages of promoting early HPV vaccination at 9-10 years, and potential facilitators and barriers to doing so. RESULTS/ANTICIPATED RESULTS: We expect that existing clinic systems will easily accommodate early recommendation and administration of HPV vaccine by expanding EMR queries and vaccination status indicators to include 9- and 10-year-olds. Clinics that are interested in promoting early HPV