

Value Added

CVCR Newsletter

Fourth Quarter 2021

Fourth Quarter News

Welcome to this quarter's issue of Value Added!

The Center for Value-Based Care Research (CVCR) conducts research on interventions that improve value in healthcare. With a mission of making quality healthcare possible for all Americans by conducting research to identify value in healthcare, CVCR seeks to deliver the right care, at the right time, to the right patients, at lower costs.

In this issue, we report on recent studies regarding healthcare delivery.

In our first story, medical student **Megan Sheehan** describes two recent publications describing the rates of reinfection for patients who have tested positive for COVID-19.

In our second story, Physical Therapist and Physical Medicine and Rehabilitation Investigator **Dr. Joshua Johnson** describes his ongoing work in post-acute care transition initiatives, specifically, High-Intensity Home-Based Rehabilitation. His recently published work sheds light on the improvements made in post-acute care delivery and ways in which it can be refined to target specific patient needs.

We hope you enjoy this quarter's newsletter!

Featured Publication

Change in Individual Physicians' Screening Mammography Completion Rates Following the Updated USPSTF Guideline Supporting Shared Decision Making: An Observational Cohort Study.

Martinez KA, Deshpande A, Lipold L, Rothberg MB.

September 2021

Patient Education and Counseling

CVCR CELEBRATIONS

Congratulations to our Professional Staff on completing CVCR's 2020-2021 Research Fellowship:

Nazleen Bharmal MD, PhD; Michelle Beidelschies, PhD; Stephen Dombrowski, PhD; Ardeshir Hashmi, MD; Maria Tang, MD; Irina Todorov, MD

We look forward to your future contributions in science and medicine!

Recently Published: Reinfection Rates among Patients who Previously Tested Positive for COVID-19: a Retrospective Cohort Study (Megan Sheehan, BS); Duration of SARS-CoV-2 Natural Immunity and Protection against the Delta Variant: A Retrospective Cohort Study (Priscilla Kim, BS)

What led to these investigations?

At the beginning of the COVID-19 pandemic, we were curious about the frequency and likelihood of reinfection. We wanted to study if prior infection offered protection against subsequent infection, and how that compared with patients who were similarly tested within the same time frame but did not have prior infection history.

Reinfection Rates Among Patients Who Previously Tested Positive for Coronavirus Disease 2019: A Retrospective Cohort Study

Megan M Sheehan BS, Anita J Reddy MD MBA, Michael B Rothberg MD MPH

Clinical Infectious Diseases

not thought to be related to COVID-19 but were tested prior to procedures or on hospital admission. Prior infection was highly protective against future infection (>80%) and protectiveness actually increased over time. This was surprising, as we assumed immunity should wane over time. This suggests that some of the early reinfections may be persistent viral shedding leading to persistent positive tests, rather than true reinfection.

Recently, we extended this work to the period when Delta was the dominant strain. We found that previous infection was also highly protective against the Delta variant. It also looks like protective immunity lasts for at least 13 months after infection.

How do you hope to see this work (publication or overall) translated into the clinical and/or community setting?

This work can help prioritize vaccinations in places where vaccine supply continues to be limited. Vaccination is the most important tool we have against the pandemic, and it would be beneficial to prioritize patients without history of prior infection in places with limited supply as natural immunity does confer some protection. It also suggests that patients who have recovered from COVID-19 have substantial protection against reinfection. It also offers some hope that we could reach herd immunity, despite not being able to vaccinate everyone.

You can access these publications [here](#) and [here](#).

What is unique about your approach/topics?

We were able to use a large set of patients who were tested at Cleveland Clinic at the beginning of the pandemic. We had an initial positive and initial negative group of patients tested within the same months to form a control group, which allowed us to estimate the protection offered from prior infection. We also had access to a questionnaire that ordering providers filled out when ordering tests for SARS-CoV-2 which detailed if patients were symptomatic.

What were the main results of the publications? Anything particularly interesting or surprising?

We found that reinfection was uncommon, and half of the patients with reinfection were asymptomatic. Many patients who were retested had symptoms that were

Duration of SARS-CoV-2 Natural Immunity and Protection against the Delta Variant: A Retrospective Cohort Study

Priscilla Kim BS, Steven M Gordon MD, Megan M Sheehan BS, Michael B Rothberg MD, MPH

Clinical Infectious Diseases

Ongoing Work: Homecare Plus

Joshua Johnson, PT, DPT, PhD

What was the motivation behind this topic for your project?

This project is a nice intersection of my interest in post-acute care transitions for rehabilitation and ongoing work enacted by health system leaders to increase the number of patients discharging home and reduce episodic care costs, particularly those related to post-acute care. It has given me a remarkable opportunity to partner with those leaders to study the value associated with this novel post-acute care pathway that they have designed and are implementing.

What is unique about your approach?

High intensity home-based rehabilitation (HIHR) represents a novel departure from what has become standard post-acute care delivery. Due to incentives in the US health system, there has become a heavy reliance on post-acute care facilities to provide non-acute medical care and rehabilitation following acute hospitalization. Innovative alternative models warrant exploration. This publication was an initial pass at describing HIHR, its implementation, and its outcomes. However, what I find most exciting about our approach with this project is the ongoing application of scientific rigor with which we will evaluate HIHR as an innovative model of care that was born out of efforts by health system leaders. It is an incredible collaboration between our CVCR research team and those leaders in the ACO, Hospital Operations, Connected Care, and Rehabilitation.

High-Intensity Postacute Care at Home

Joshua K Johnson DPT, PhD, Jessica A Hohman MD, MSc, William Zafirau MD, et al.

NEJM Catalyst

What were the important findings from your recent publication?

Our study included the first 81 patients discharged from Cleveland Clinic hospitals to HIHR, under the care of Cleveland Clinic Home Care. In general, those patients were able to improve their functional status during the HIHR episode at care costs that were far less than would have been expected during a standard admission to a skilled nursing facility.

Have any of your findings surprised you or diverted your work in an unexpected way?

We were initially surprised upon reviewing the data at the characteristics of the patients discharged to HIHR, though realized that we shouldn't have been given the ever-shifting healthcare landscape during the COVID-19 pandemic. The medical acuity of the patients in our study was higher than expected, relative to the patients for whom HIHR was designed. Despite mild functional improvement, many of those more ill patients did not benefit from HIHR as much as was expected. This has prompted Dr. Jessica Hohman (a CVCR investigator and collaborator on this project) to explore whether more appropriate at-home medical services may be optimal for that patient subgroup.

How do you hope to see this work translated into the patient-care setting?

As we continue to implement and examine HIHR among varied clinical populations, we hope to demonstrate its clinical effectiveness. If patients wish is to go directly home from the hospital in order to heal, we hope that HIHR can adequately address their rehabilitation needs so that they can experience a restoration of functional independence and recover or maintain a high quality of life.

You can access this recent publication [here](#). Be sure to look out for updates on this project in the near future!

RECENT PUBLICATIONS

Hadad MJ, Orr MN, Emara AK, Klika AK, Johnson JK, Piuze NS. [PLAN and AM-PAC "6-Clicks" Scores to Predict Discharge Disposition After Primary Total Hip and Knee Arthroplasty.](#) J Bone Joint Surg Am. 2021 Dec 20.

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