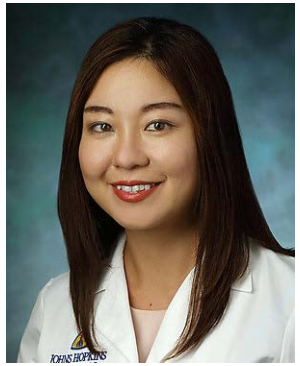
JOHNS HOPKINS MEDICINE

The Johns Hopkins Post-Acute COVID-19 Team (PACT): Multidisciplinary Outpatient COVID-19 survivorship program

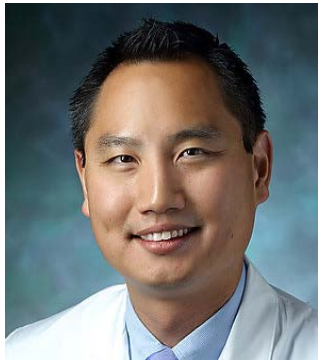
Established April 7, 2020

Our PM&R team



Sooyeon Kim, MD

Alba Azola, MD



Tae Hwan Chung, MD

Laurie Fitz, PT CLT

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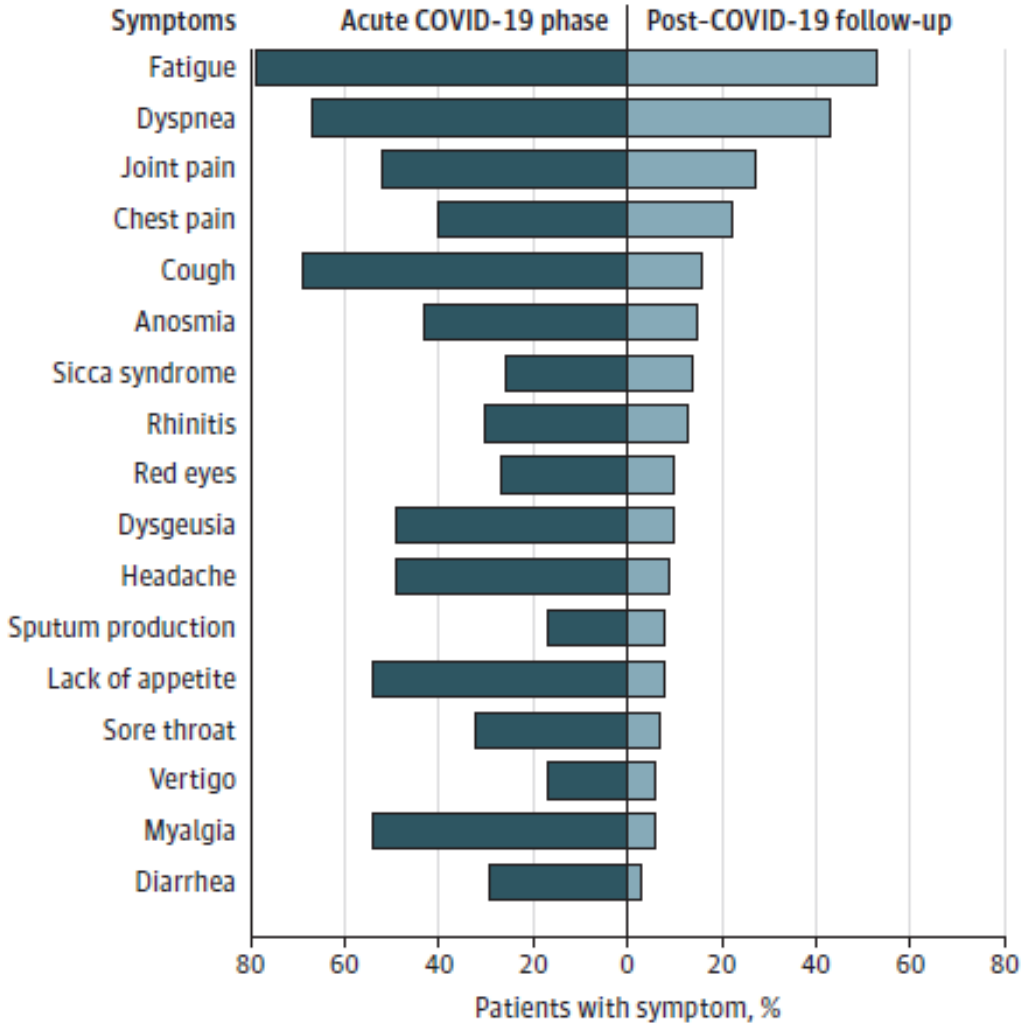
Needs Assessment

- Numbers large and growing (as of Feb, 2021):
  - 27M cases in the U.S.
  - 372k cases in Maryland, >1K cases daily
  - JH Hospital System: 15-20% estimated ICU
- Hospitalized patients commonly experience “Post-Hospital Syndrome” (or Post-Intensive Care Syndrome (PICS) for critical illness survivors), including:
  - Impaired physical function
  - Mental health
  - Cognitive deficits
  - Increased use of healthcare resources (i.e. readmission)
- Increasing reports (and referrals for) lingering symptoms in non-hospitalized patients

Long-COVID Syndrome – persistent symptoms > 3 months

- Severe, profound fatigue
- Orthostatic tachycardia/dizziness/intolerance
- Chronic muscle/joint pain and headache
- Often complains nausea/vomiting, and IBS
- Overall course fluctuating over time

Figure. COVID-19–Related Symptoms

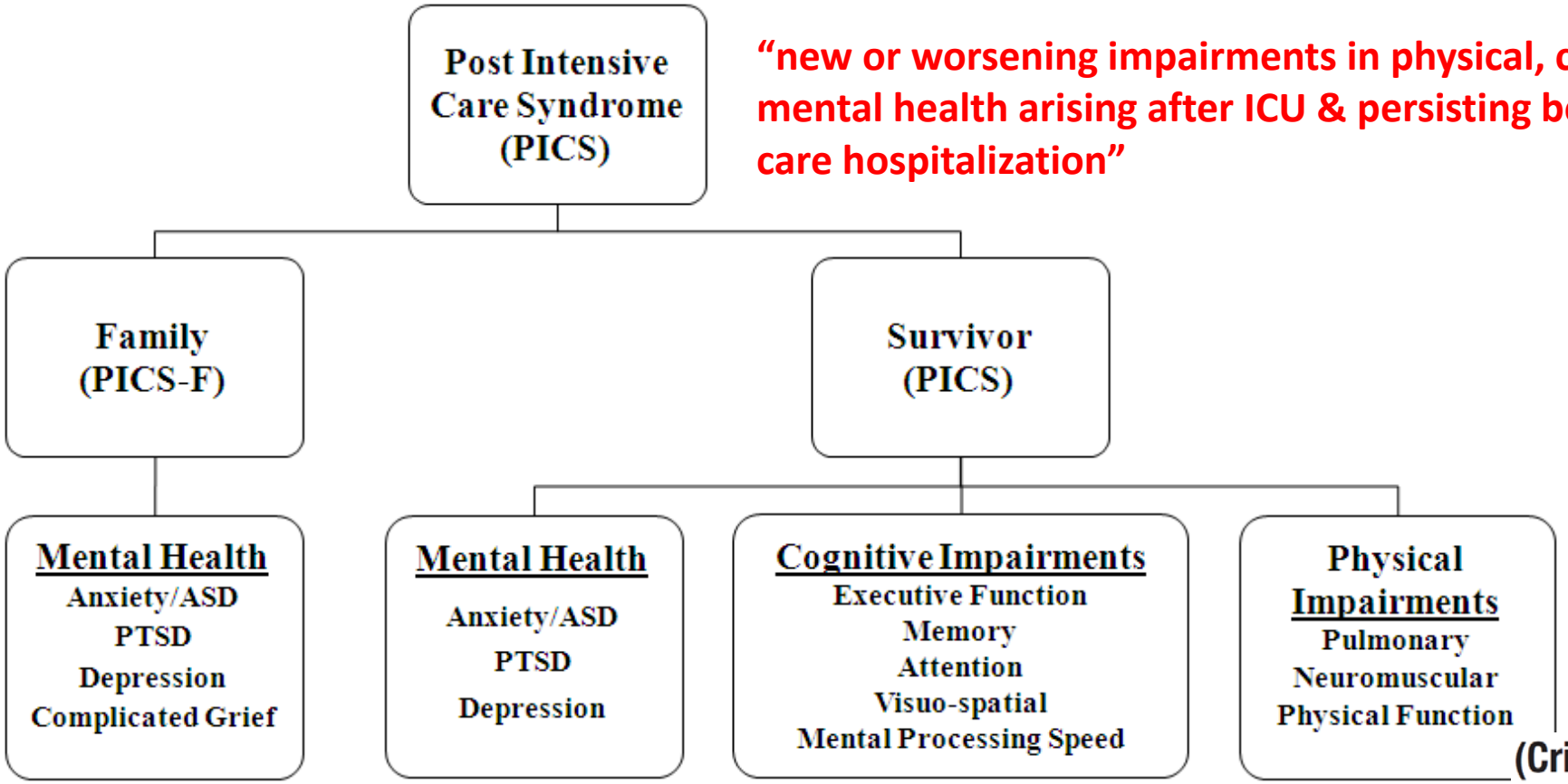


JAMA. 2020 Aug 11;324(6):603-605

Framework

Improving long-term outcomes after discharge from intensive care unit: Report from a stakeholders' conference*

Dale M. Needham, MD, PhD; Judy Davidson, DNP, RN; Henry Cohen, PharmD; Ramona O. Hopkins, PhD;



"new or worsening impairments in physical, cognitive, or mental health arising after ICU & persisting beyond acute care hospitalization"

(Crit Care Med 2012; 40:502–509)

Post Acute COVID-19 Clinic

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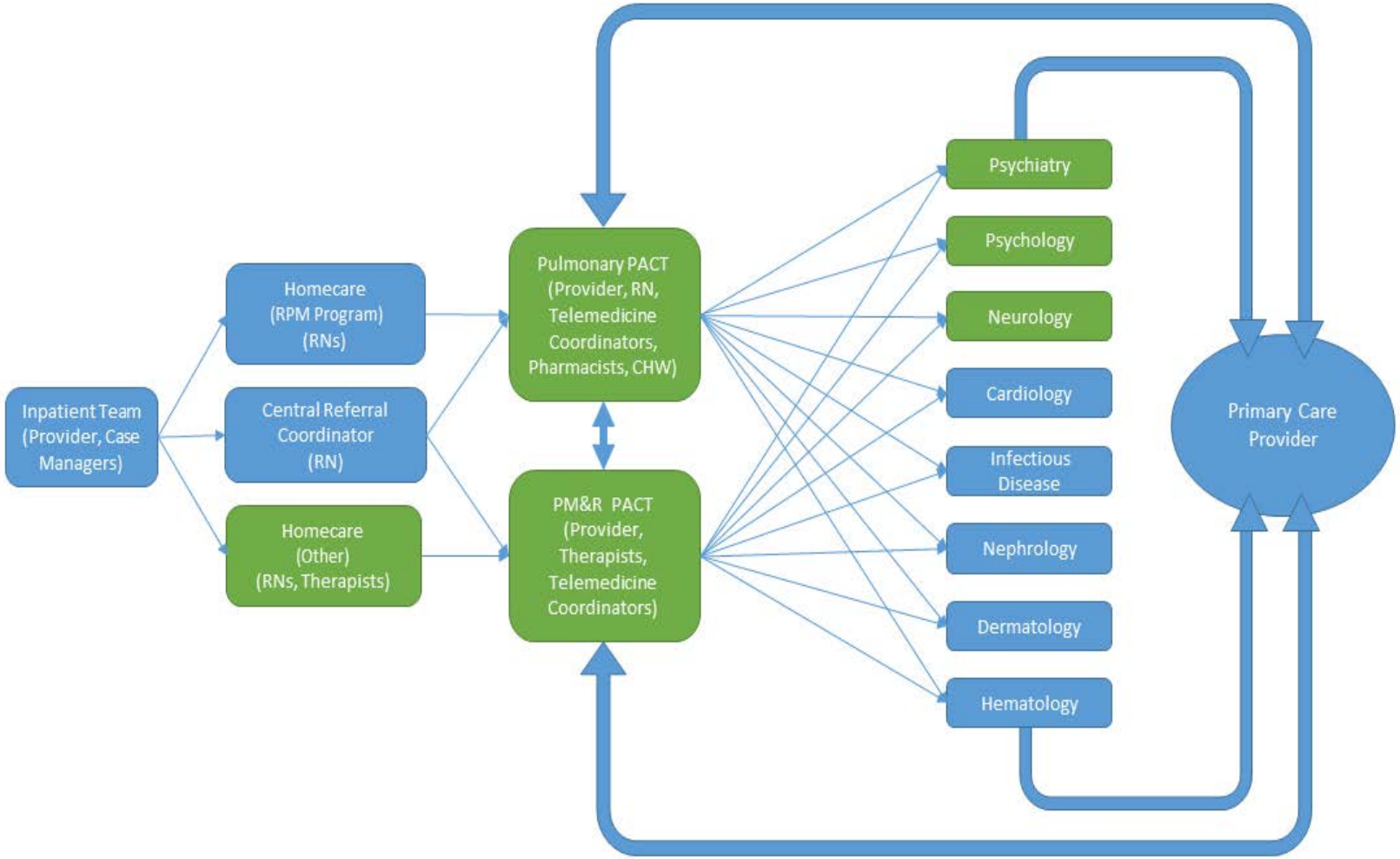
GOAL

- Provide the Continuum of Care to address the unique needs of COVID-19 survivors.
- Establish dedicated multi-D resources focused on post-COVID 19 recovery to support anticipated patient needs (respiratory, functional, cognitive, psych), and Unknown Covid-19 specific long term complications
- Convenient, streamlined resource for inpatient teams at discharge and prevent readmission
- Equity of ambulatory care within and across JHHS to support COVID-19 survivors.
- Understand the natural history of disease

Key Services of the PACT Clinic



The Johns Hopkins Post-Acute COVID-19 Team (PACT): A Multidisciplinary, Collaborative, Ambulatory Framework Supporting COVID-19 Survivors. Am J Med. 2021 Jan 11:S0002-9343(20)31174-8

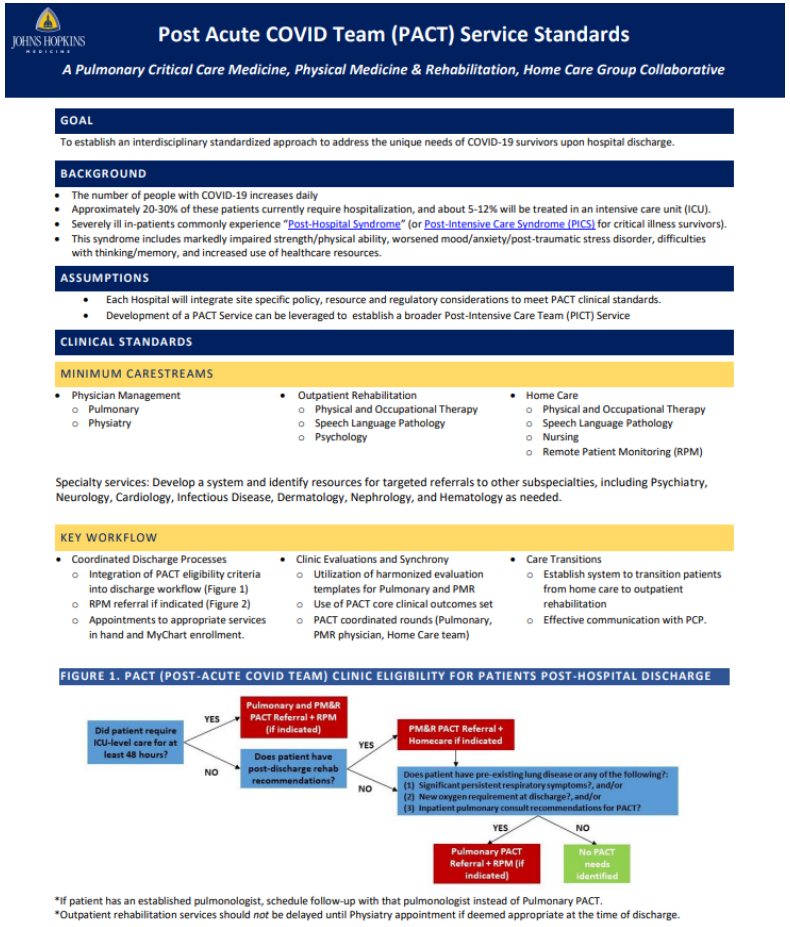
JH PACT Tripartite Mission

April 7th - present

	N>400
ICU admission N (%)	70%
Age (Mean (SD) years)	54 (15)
Male N (%)	53%
Race N (%) White Black or African American Asian	 26% 33% 6%
Ethnicity N (%) Hispanic or Latino	 29%
Interpreter Services N (%)	26%

PACT as a model system

- National/International requests for model:
  - UCSF, OHSU, U Pitt, U Maryland, U Texas
  - VA inquiries; Walter Reed
  - Vancouver, BC



Post Acute COVID Team (PACT) Service Standards

A Pulmonary Critical Care Medicine, Physical Medicine & Rehabilitation, Home Care Group Collaborative

GOAL

To establish an interdisciplinary standardized approach to address the unique needs of COVID-19 survivors upon hospital discharge.

BACKGROUND

- The number of people with COVID-19 increases daily
- Approximately 20-30% of these patients currently require hospitalization, and about 5-12% will be treated in an intensive care unit (ICU).
- Severely ill in-patients commonly experience "Post-Hospital Syndrome" (or Post-Intensive Care Syndrome (PICS) for critical illness survivors).
- This syndrome includes markedly impaired strength/physical ability, worsened mood/anxiety/post-traumatic stress disorder, difficulties with thinking/memory, and increased use of healthcare resources.

ASSUMPTIONS

- Each Hospital will integrate site specific policy, resource and regulatory considerations to meet PACT clinical standards.
- Development of a PACT Service can be leveraged to establish a broader Post-Intensive Care Team (PICT) Service

CLINICAL STANDARDS

MINIMUM CARESTREAMS

- Physician Management
  - Pulmonary
  - Physiatry
- Outpatient Rehabilitation
  - Physical and Occupational Therapy
  - Speech Language Pathology
  - Psychology
- Home Care
  - Physical and Occupational Therapy
  - Speech Language Pathology
  - Nursing
  - Remote Patient Monitoring (RPM)

Specialty services: Develop a system and identify resources for targeted referrals to other subspecialties, including Psychiatry, Neurology, Cardiology, Infectious Disease, Dermatology, Nephrology, and Hematology as needed.

KEY WORKFLOW

- Coordinated Discharge Processes
  - Integration of PACT eligibility criteria into discharge workflow (Figure 1)
  - RPM referral if indicated (Figure 2)
  - Appointments to appropriate services in hand and MyChart enrollment.
- Clinic Evaluations and Synchrony
  - Utilization of harmonized evaluation templates for Pulmonary and PMR
  - Use of PACT core clinical outcomes set
  - PACT coordinated rounds (Pulmonary, PMR physician, Home Care team)
- Care Transitions
  - Establish system to transition patients from home care to outpatient rehabilitation
  - Effective communication with PCP.

FIGURE 1. PACT (POST-ACUTE COVID TEAM) CLINIC ELIGIBILITY FOR PATIENTS POST-HOSPITAL DISCHARGE

*If patient has an established pulmonologist, schedule follow-up with that pulmonologist instead of Pulmonary PACT.
*Outpatient rehabilitation services should *not* be delayed until Physiatry appointment if deemed appropriate at the time of discharge.

PMR PACT service

- PM&R PACT
- PACT POTS
- PACT OT/PT/SLT
- PACT Psychology

JH PACT-Research Aspirations

1. Define the spectrum of pulmonary complications in long-COVID, physiologic correlates, and risk factors thereof.

2. Create an infrastructure for therapeutic trials and competitive grant applications.
   - Provide a resource for emerging questions (biorepository).

3. Interrogate economics of care delivery (RPM, telemedicine, in-person; multi-d framework) to support longevity of the clinical program.

Summary

- For more details, please come to our on demand session
  - Managing the Ambulatory Wave: Multidisciplinary Outpatient COVID-19 Survivorship Program
- Our website: https://www.hopkinsmedicine.org/coronavirus/pact
- For any inquires, please email PACT@jhmi.edu or Skim453@jh.edu
- The Johns Hopkins Post-Acute COVID-19 Team (PACT): A Multidisciplinary, Collaborative, Ambulatory Framework Supporting COVID-19 Survivors. Am J Med. 2021 Jan 11:S0002-9343(20)31174-8