

Nursing and Therapy Respiratory Care Focus for the COVID-19 and post-COVID Patient

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Objectives

Demonstrate Participants will demonstrate an understanding of typical respiratory complications, and residual effects of COVID on the respiratory and cardio-vascular function of a patient.

Know

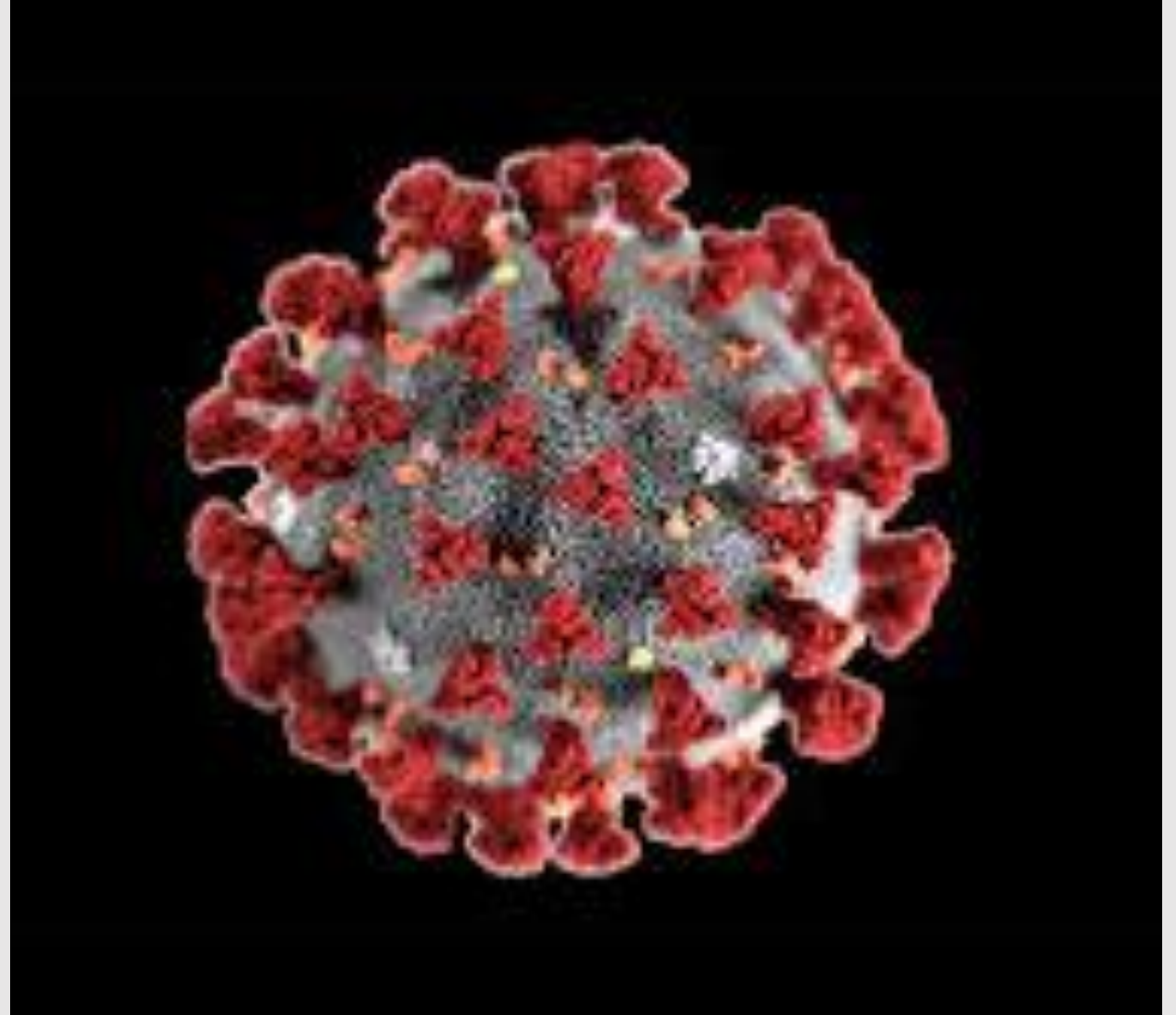
Participants will know basic care delivery tasks that nurses, physical, occupational, and speech therapists can include in their care plans.

Support Participants will feel confident to support care delivery of the post-COVID patient through a team approach which includes nurses and all therapy disciplines.

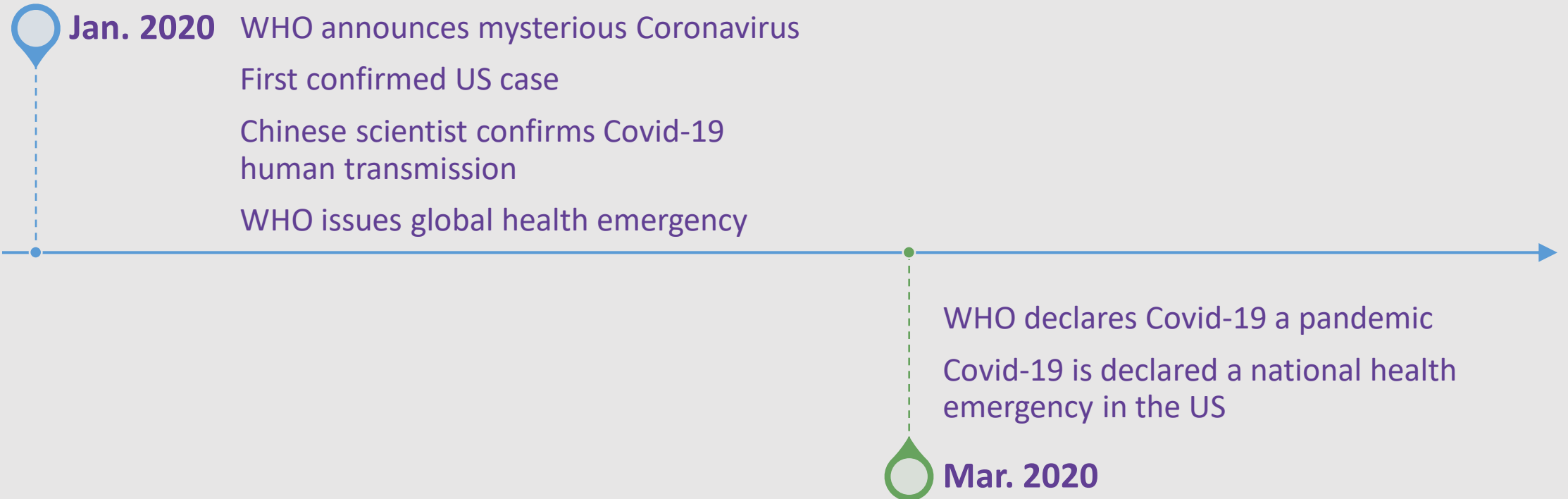


Coronavirus

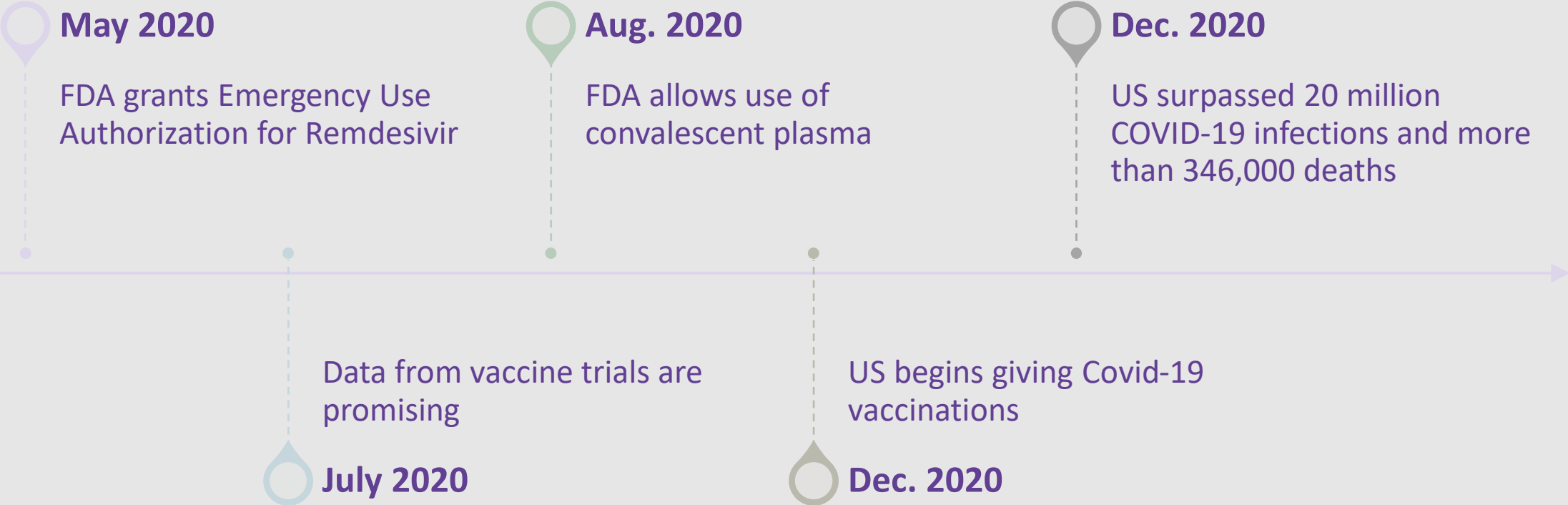
- Group of related RNA viruses
- 4 main subgroups
- 1st identified mid-1960's
- Newly identified SARS-CoV-2 causes the illness Covid-19



The COVID-19 Pandemic



The COVID-19 Pandemic



Covid-19 Classifications

- Mild – may include fever, dry cough/sore throat, malaise, headache, muscle pain, congestion or runny nose, loss of taste or smell, and diarrhea
- Moderate – Same symptoms as mild plus greater cough, some signs of lower respiratory disease
- Severe – Shortness of breath, increased respiration rate, oxygenation is less than 94%
- Critical – Signs of respiratory failure, breathing assistance is required; shock or multiorgan failure (MOF)



Covid-19 Impact

Pulmonary

Cardiovascular

Gastro-Intestinal

Neurological



Covid-19 Impact on Older Adults

- Greater Risk/ Increases with age
- Certain medical conditions
- Co-morbidities
- Congregate Living



Acute Signs and Symptoms of COVID Infection

- Fever
- Chills
- Cough
- Fatigue
- Difficulty Breathing
- Shortness of Breath
- Muscle or Body Aches
- Headache
- Loss of Taste or Smell
- Nausea, Vomiting, Diarrhea



Identifying and Treating a Covid positive resident

Frequent assessments-every shift

Infection Control measures

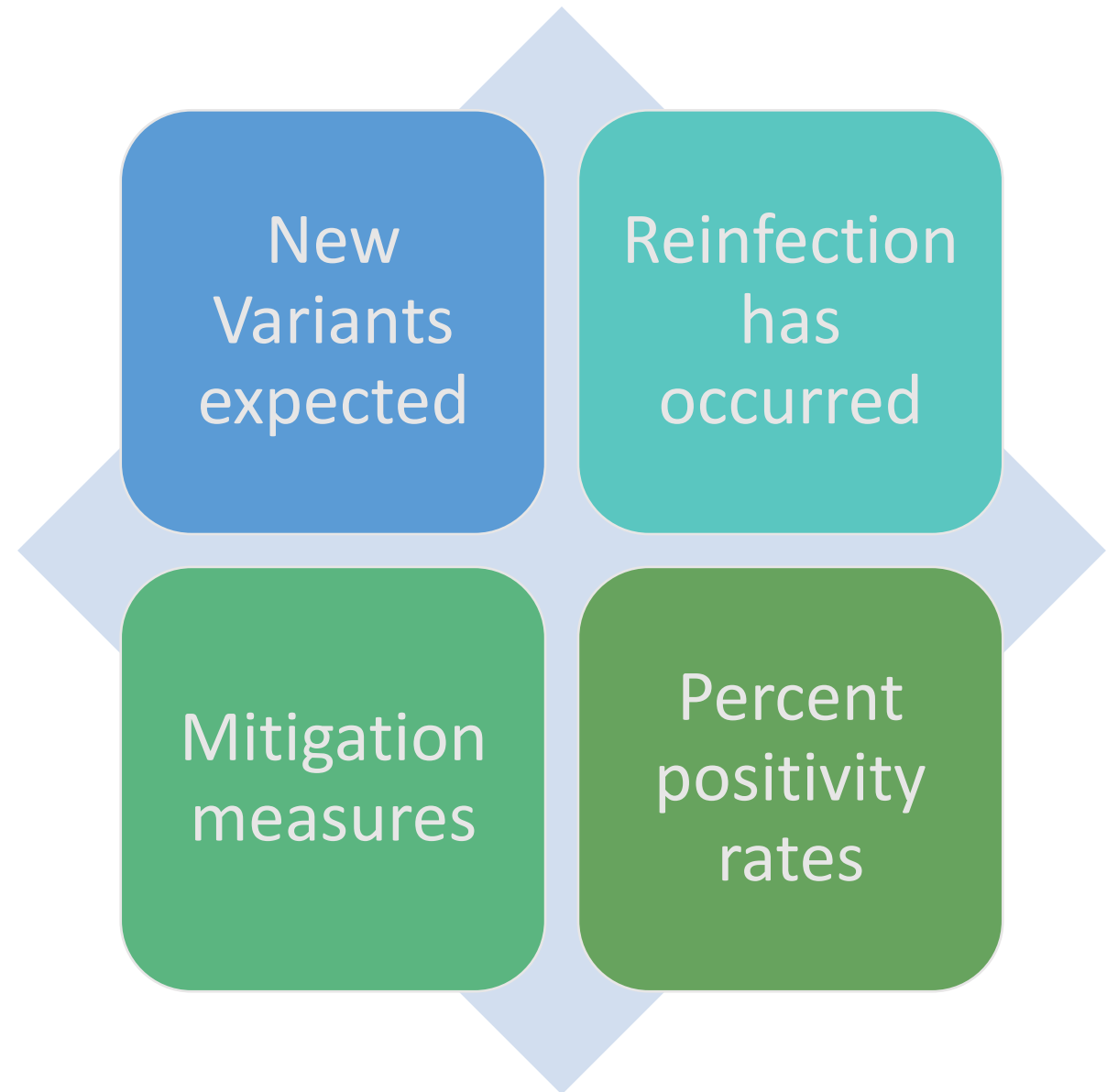
- Hand hygiene and PPE
- Screening and Testing
- Cleaning and Disinfecting
- Social distancing
- Visitor restriction

Emergency warning signs

Symptomatic and supportive treatment



New Variants and Reinfection



Covid-19 Terminology

Long Covid-19

Post Covid-19 Syndrome

Post Acute Covid-19
Syndrome

Long Haulers



Covid-19 Long Haul Syndrome

What is it?

Fatigue

Headaches

Brain fog

Dyspnea

Word finding difficulty

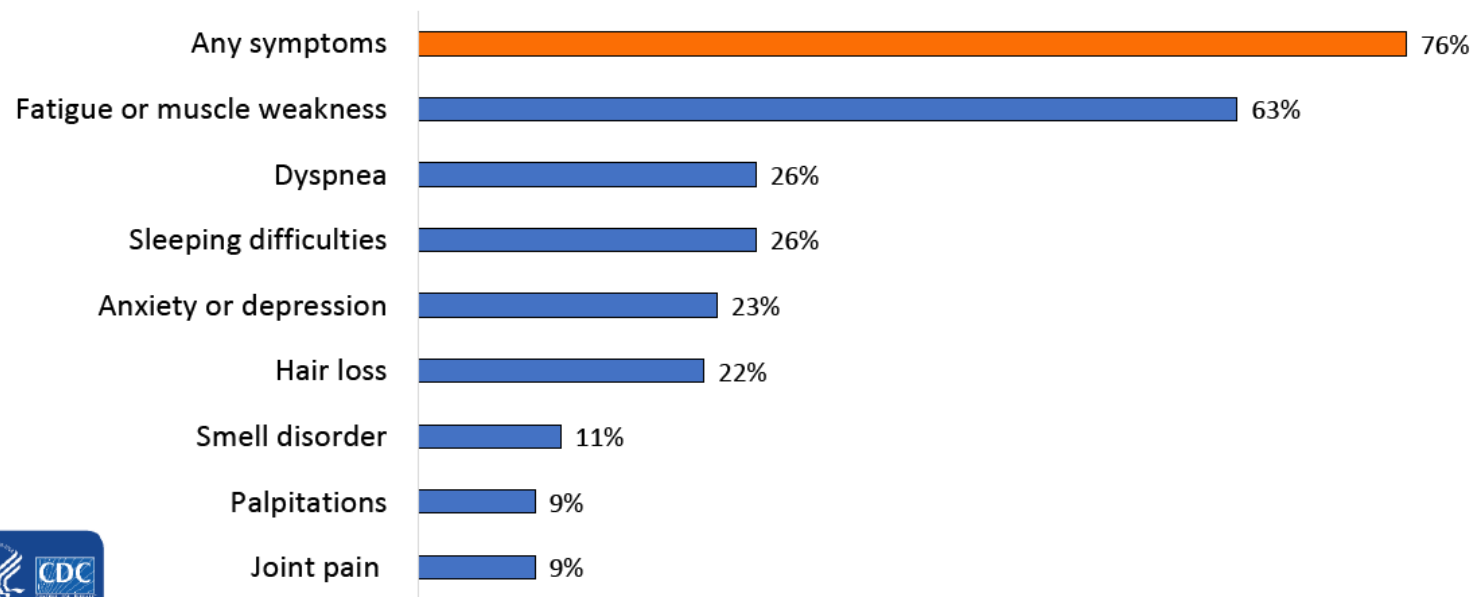
Anxiety



Long Covid Statistics

Three quarters of patients hospitalized with COVID-19 had at least one ongoing symptom 6 months after their acute illness.

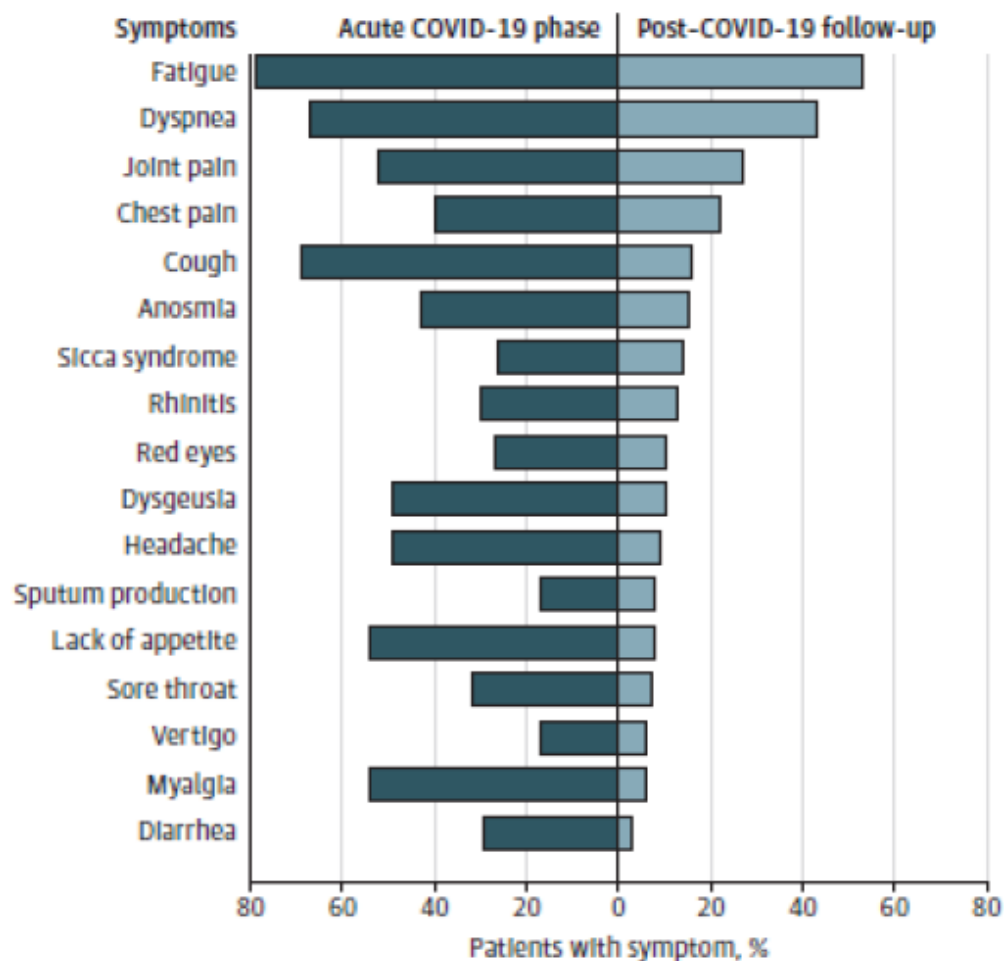
Symptoms among 1,733 patients after hospitalization for COVID-19, China



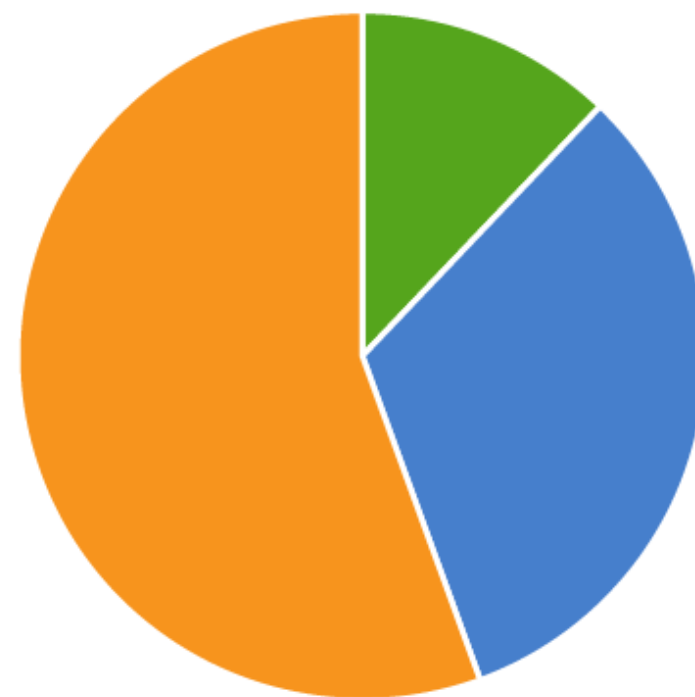
Huang et al., Lancet. 2021



Figure. COVID-19-Related Symptoms



Persistent Symptoms in 87%



■ None (13%) ■ 1 to 2 (32%) ■ 3 or more (55%)



Potential for Persistent Interstitial Lung Disease

Residual pulmonary infiltrates

Decreased pulmonary function

Sustained inflammation

Risk factors

- Age
- Male gender
- Comorbidities



Neurological Symptoms

- Brain fog
 - Deficits: short-term memory, concentration, word-finding
- Sleep disturbance
- Depression/anxiety/PTSD
- Headaches
- Paresthesia



Individualized Care Plan for Covid-19 and Long Covid Syndrome

Assessment

Planning

Implementation

Evaluation



Assessment is Multi-disciplinary

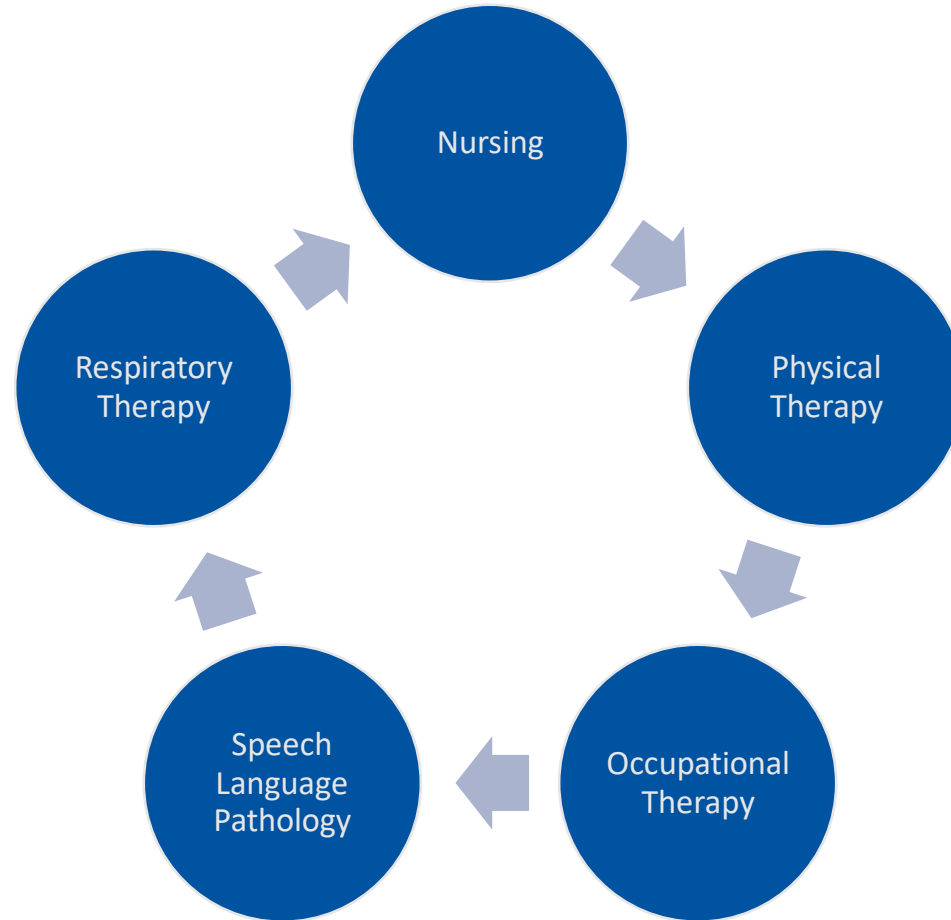


Chart Review

- Disease progression
- Hospitalization
 - ICU
 - Intubation
 - Cardiovascular/neurological/
kidney involvement



Patient Interview



SOCIAL HISTORY



PRIOR LIVING
ENVIRONMENT



PRIOR LEVEL OF
FUNCTION



SOB AT REST AND/OR
WITH ACTIVITY



Cardiopulmonary - Assessment

GENERAL APPEARANCE

PULSE/BLOOD
PRESSURE/OXYGENATION/RESPIRATION RATE

EDEMA

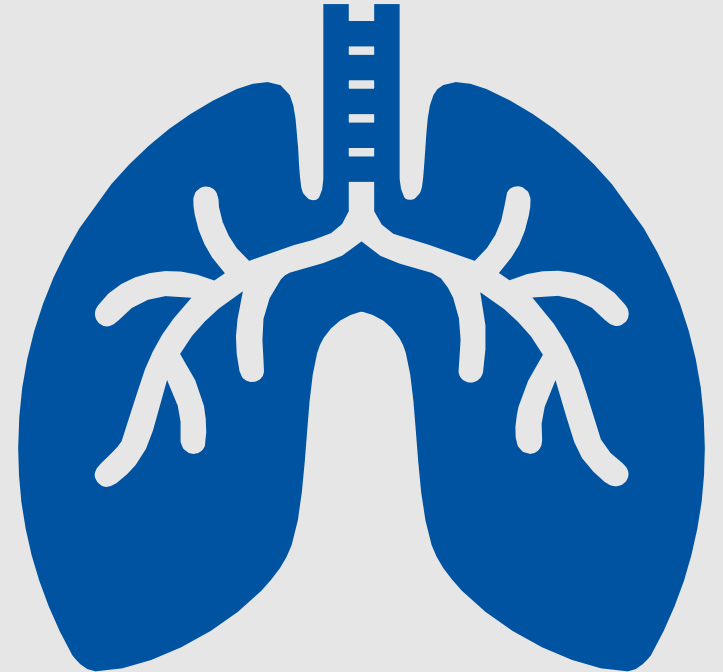
COLOR OF THE EXTREMITIES

JUGULAR VENOUS DISTENSION



Pulmonary/Respiratory Assessment

- Detailed pulmonary history
- Oxygen Saturations/Pulse Ox
- Lung Sounds
- Rate and quality of respirations-at rest and on exertion
- Use of accessory muscles
- Shortness of breath or dyspnea present
- Color of skin, lips, mucous membranes



Musculoskeletal

Joint range

Symmetry of joints/muscles

Joint swelling

Muscle strength

Muscle symmetry

Posture



Integumentary

- Wounds
 - Check for pressure areas anteriorly as well as posteriorly
 - Web spaces
- Color
- Moisture
- Temperature
- Texture
- Turgor



Pain

Location

Pattern

Intensity

Description



Cognitive - Assessment

- Covid-19 patients with prolonged ICU stay may have lingering cognitive deficits
- Chicago medical center study
 - 40% of Covid-19 patients had neurological signs; 30% of those had impaired cognition
- New research suggests Covid-19 survivors may have mild brain damage causing pervasive subtle cognitive, behavioral, and psychological problems



Assessing Cognition and Emotional Status

- BIMS
- SLP referral for patients with subtle cognitive deficits who may not be safe to return home alone
- PHQ 9



Speech and Language Therapy Service Expansions

Cognitive Therapy

- Difficulty thinking and organizing thoughts

Dysphagia

- Safe swallowing strategies
- Food texture

Respiratory Voice

- Reduced vocal loudness
- Trouble breathing when speaking

Communication, Alternative Communication Devices



SLP needs post intubation

- Residents who have been intubated for COVID may have residual damage
 - Reduced muscle strength for productive and reflexive cough
 - Damage with tissue scarring and swelling due to the ventilator tube presence just below the vocal cords
 - Loss of taste affecting swallowing and eating
 - ICU delirium and hypoxic encephalopathy



Neurological - Assessment

Cranial nerves

Sensory and
motor testing

Proprioception

Deep tendon
reflexes

Balance and
coordination

Muscle tone

Movement
patterns



Functional Mobility Assessment

Bed mobility

Transfers

Gait analysis

- Level surfaces/uneven surfaces/stairs

Wheelchair mobility and management

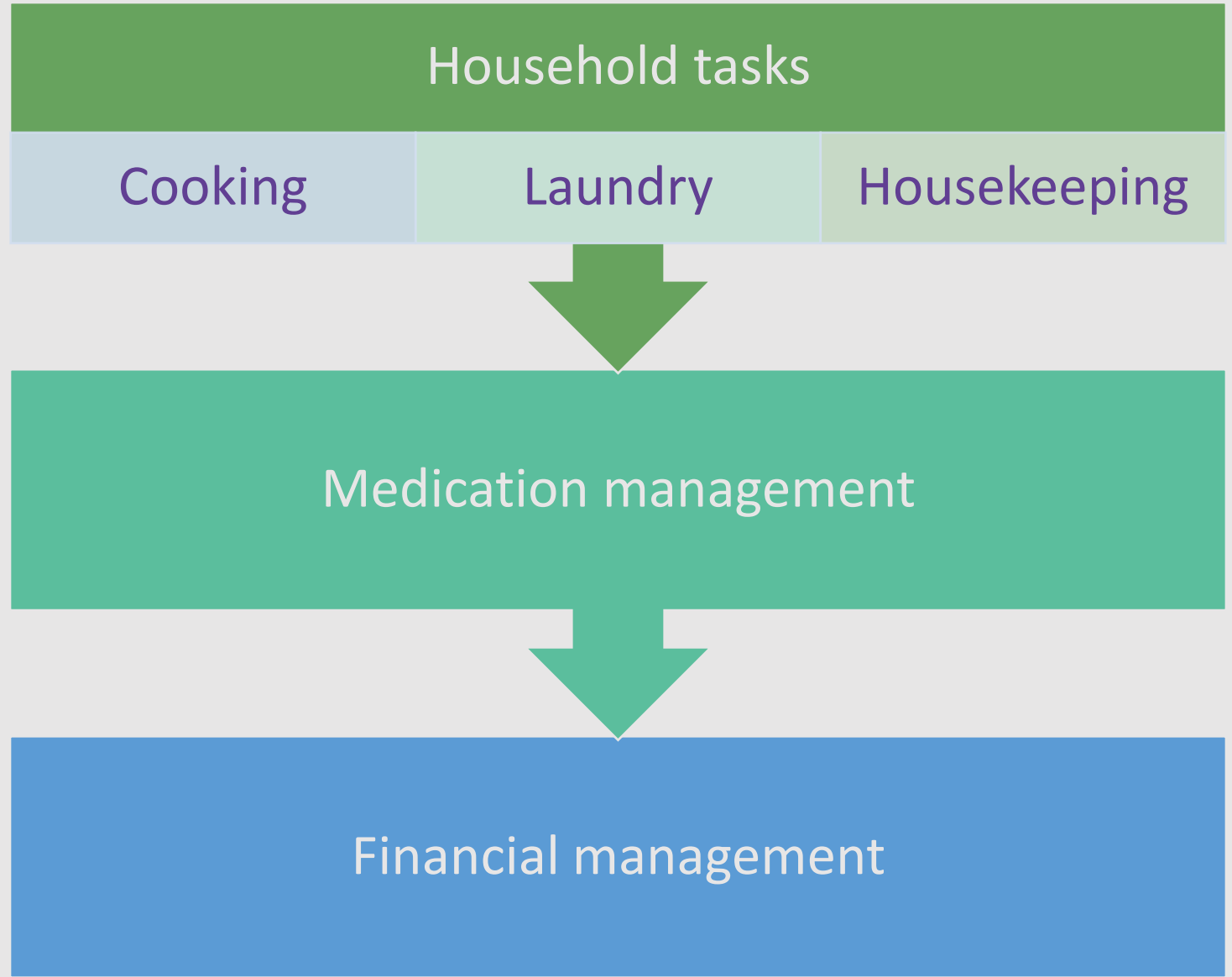




Self-Care Management Assessment



IADL Assessment



Treatment
Considerations
performed
by the
multi-disciplinary team



Therapy Frequency and Duration

Frequency considerations

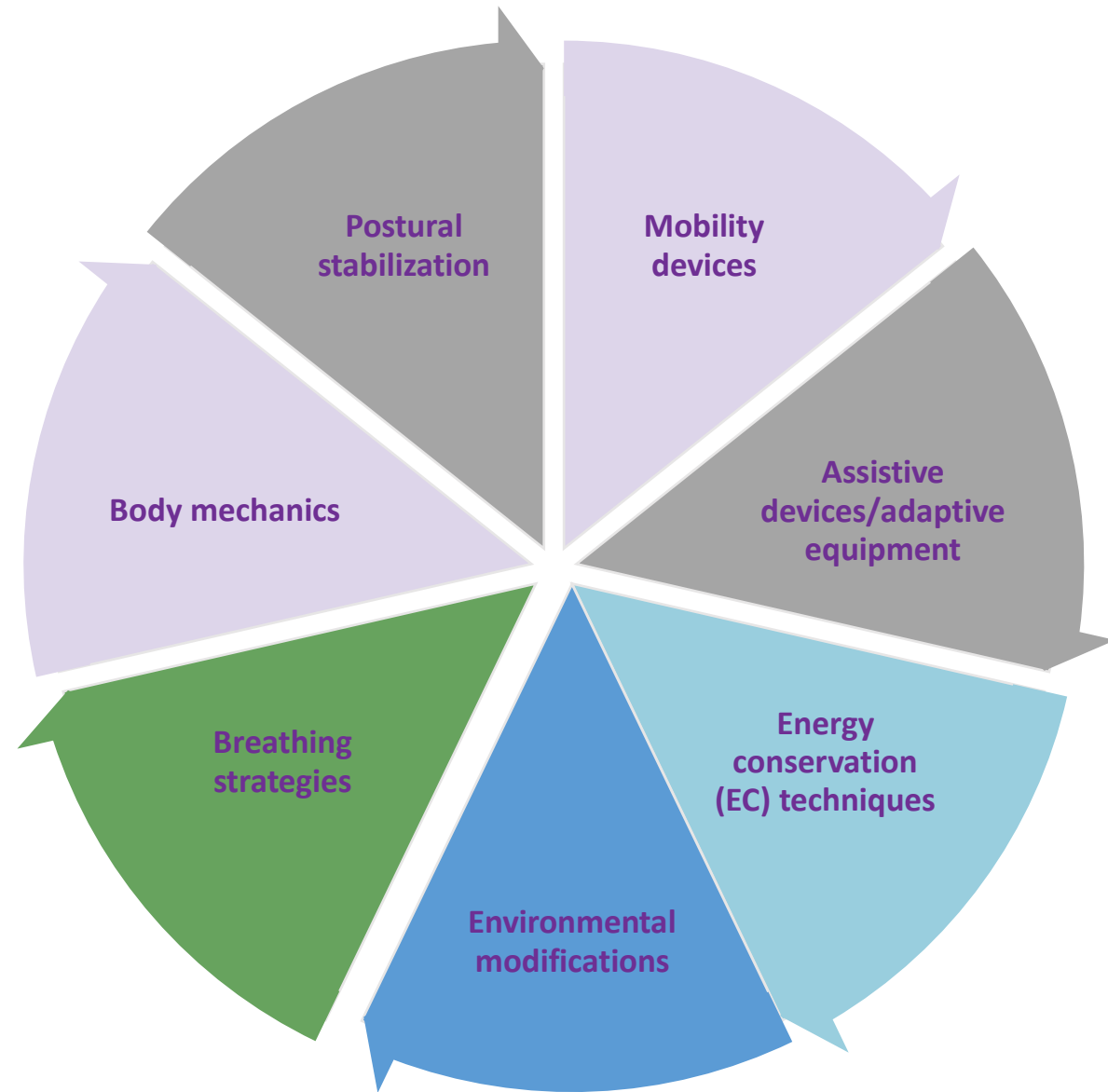
- 5 / 6 / 7 times a week
- Dialysis/Chemotherapy/Radiation/Wound
- Cardiopulmonary status

Duration considerations

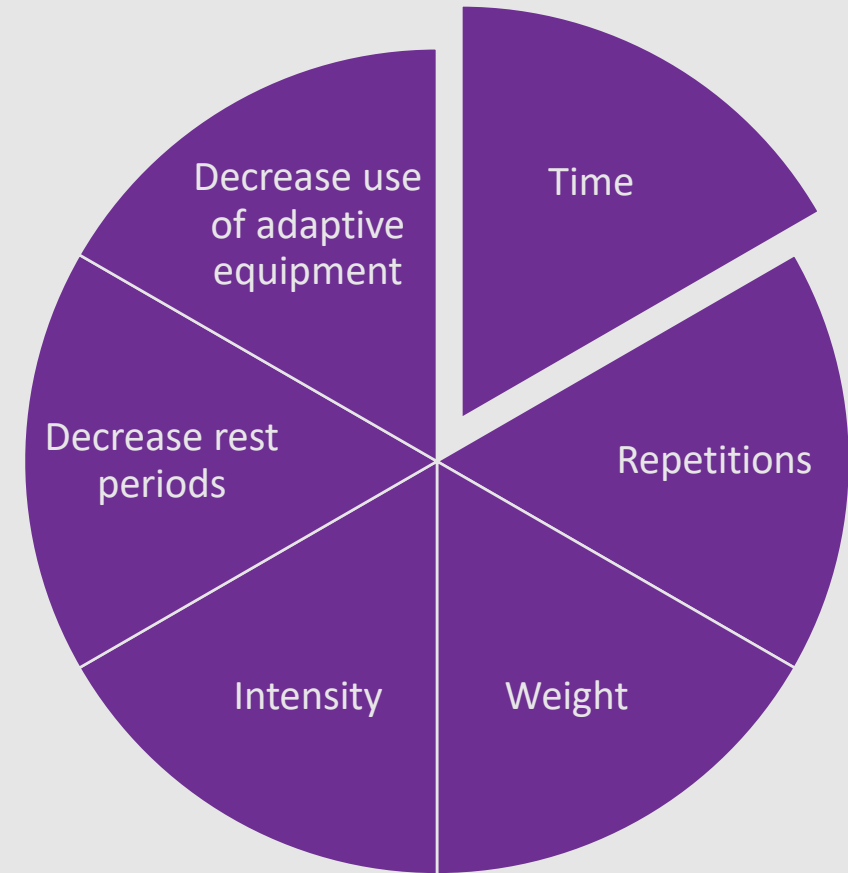
- 2 / 3 / 4 weeks or more
- Prognosis / Progress
- Potential for achieving goals



Functional Mobility and Self-Care Management Treatment Considerations



Methods to Advance Functional Training



Exercise and Activity Guidelines

- Patient monitoring
 - Pulse oximetry
 - Dyspnea and exertion scales BORG
 - Vital signs
- Teach patient self-regulation
- Consider co-morbidities
- Basic functional mobility and self-care management
- Therapeutic exercise interventions (after physician consultation) will be performed by PT and OT primarily
- The patient may have a home exercise program to complete in the room



Treatment - Strengthening

- Focus on functional training
 - Bed mobility
 - Transitional activities
 - Transfer training
 - Gait training
 - Dressing
 - Bathing



Typical Respiratory treatments

- Per RAI Manual, resident evaluation/assessment, treatment administration and monitoring, and setup and removal of treatment equipment
- Treatment minutes may include:
 - Nebulizer or other medication treatments
 - Coaching on Pursed Lip Breathing
 - Education to patient and family
 - Monitoring and changing supplemental oxygen equipment
 - Coaching on the incentive spirometer
 - Auscultation associated with breathing patterns
 - Patient positioning to improve dyspnea
 - Pulmonary hygiene consisting of hydration, deep breathing exercises and coughing techniques.
 - Monitor respiratory status.



Breathing Exercises

- Diaphragmatic breathing
 - Supine (hips and knees flexed, feet flat)
 - Prone
 - Sitting
 - Standing



Additional Breathing Techniques

Inhale

- Inhale during shoulder flexion, abduction and external rotation along with an upward eye gaze

Exhale

- Exhale during shoulder extension, adduction and internal rotation with downward gaze

Inhale

- Inhale when extending the trunk to sit

Exhale

- Exhale when leaning forward to stand





Assistive
devices/adaptive
equipment

Reacher

Long-handle shoe-horn

Long-handle sponge

Sock aid





Energy Conservation

- *Using the body efficiently to perform activities in a manner that minimizes fatigue, joint stress, and pain.*



Energy Conservation

STRATEGIES

Plan

Frequent short rests

Prioritize

Difficult tasks during your best time

Analyze tasks

Avoid activities that cannot be stopped

Eliminate unnecessary steps

Rest before tiring

Combine tasks

Find the balance (work, leisure, exercise, rest)

Make changes as needed

Breathing techniques



Treatment Implications - Cognitive

SLP Referral

Psychology/Psychiatry Referral

Communication modifications/strategies

Environmental modifications

Discharge planning



SLP Dysphagia Treatment Interventions

Instrumental assessments using MBS or FEES

Diet modification

Compensatory strategies

Strengthening exercises

Patient, family and caregiver education



SLP Voice Treatment Interventions

Resonant based or semi-occluded vocal tract exercises

Voice therapy to decrease muscle tension

Increased forward resonance and projection

LSVT LOUD program to increase voice and speech clarity

Oral motor strengthening exercises

Patient, family and caregiver education





Summary

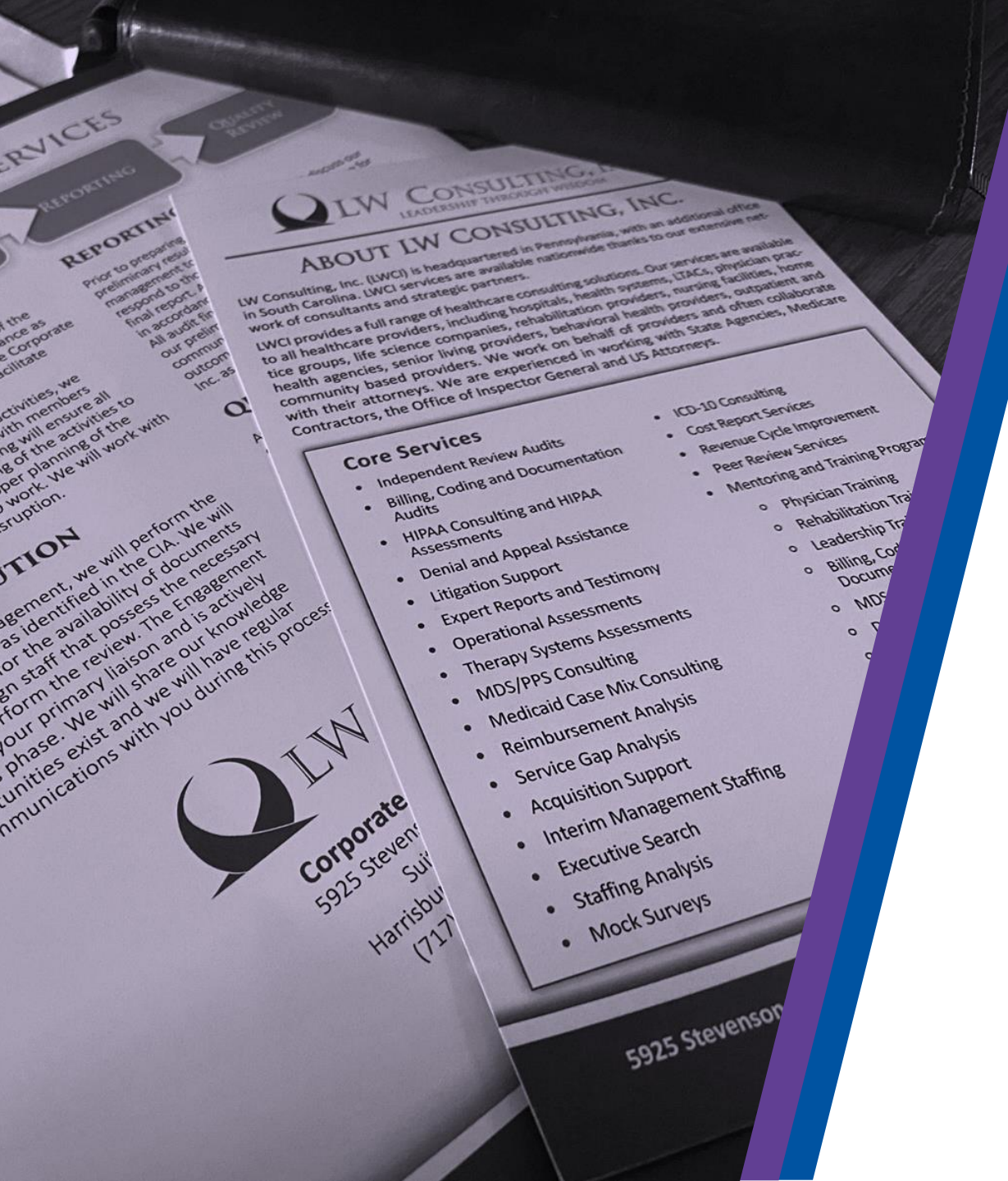
- Recovery from COVID is very personalized based on the disease presentation for each patient.
- All caregivers must work together to support focus on restoration of critical body systems that were impacted by the virus.
- Rules of thumb are to:
 - Allow time for tasks,
 - Perform small amounts of activity often,
 - Cue and coach the patient
 - Monitor vital signs



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Questions?



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