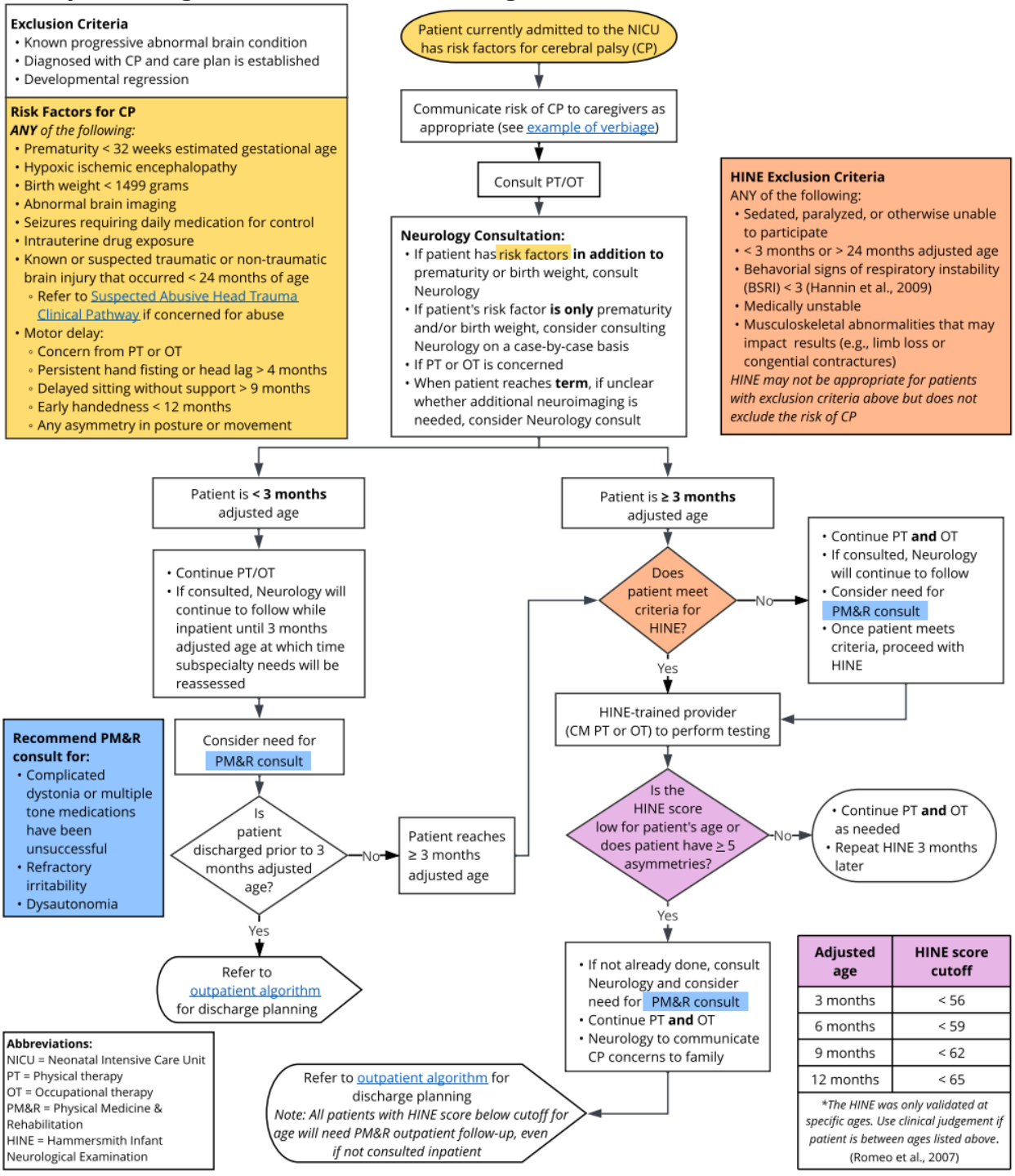
Cerebral Palsy Screening
Clinical Pathway Synopsis

Cerebral Palsy Screening: Neonatal Intensive Care Algorithm



These clinical pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.

Cerebral Palsy Screening: Outpatient Algorithm

Exclusion Criteria
- Known progressive abnormal brain condition
- Developmental regression
- Previous diagnosis of CP and care plan is established

Risk Factors for CP
***ANY** of the following:*
- Motor delay:
  - Persistent hand fisting or head lag > 4 months
  - Delayed sitting without support > 9 months
  - Early handedness < 12 months
  - Concern from PT or OT
- Any asymmetry in posture or movement
- Hypoxic ischemic encephalopathy
- Abnormal brain imaging
- Seizures requiring daily medication for control
- Intrauterine drug exposure
- Known or suspected traumatic or non-traumatic brain injury that occurred < 24 months of age
  - Refer to Suspected Abusive Head Trauma Clinical Pathway if concerned for abuse
- Prematurity < 28 weeks estimated gestational age

***Consider** risk for:*
- Prematurity 28 - 32 weeks estimated gestational age
- Birth weight < 1499 grams

Appropriate PT/OT includes neurospecific therapies which may include:
- Functional vision screening
- Vibration therapy
- Neuromuscular electrical stimulation (NMES)
- Constraint Induced Movement Therapy (CIMT)

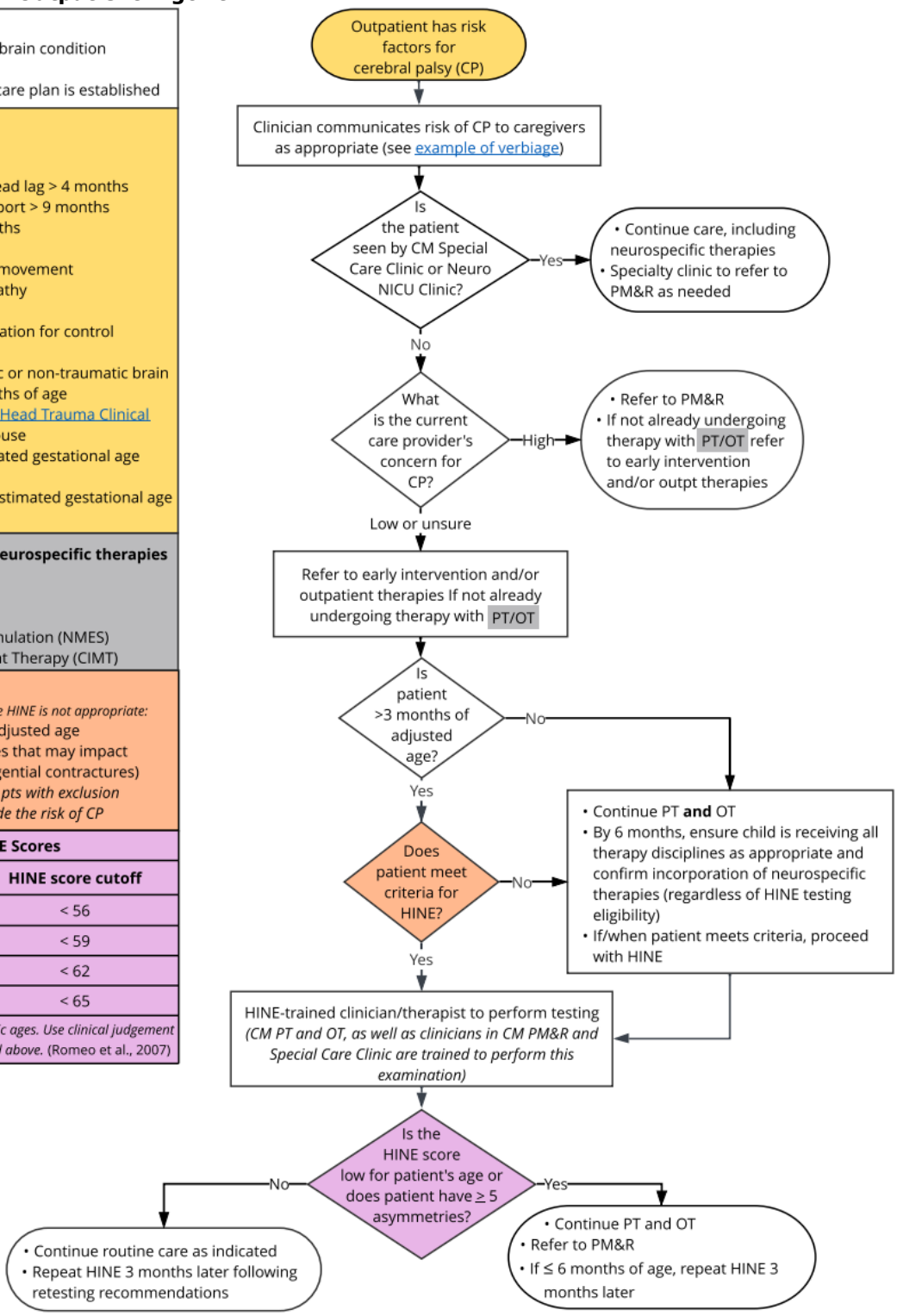
HINE Exclusion Criteria
*If patient has **ANY** of the following, the HINE is not appropriate:*
- < 3 months or > 24 months adjusted age
- Musculoskeletal abnormalities that may impact results (e.g., limb loss or congential contractures)

HINE may not be appropriate for pts with exclusion criteria above but does not exclude the risk of CP

Age-Based HINE Scores

Adjusted age	HINE score cutoff
3 months	< 56
6 months	< 59
9 months	< 62
12 months	< 65

**The HINE was only validated at specific ages. Use clinical judgement if the patient is between the ages listed above.* (Romeo et al., 2007)



Abbreviations:
PT = Physical therapy
OT = Occupational therapy
PM&R = Physical Medicine & Rehabilitation
HINE = Hammersmith Infant Neurological Examination

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Objective of Clinical Pathway

To provide care standards for infants at risk for cerebral palsy. This pathway aims to guide diagnostic testing, referral to specialists, and follow-up care for these patients.

Background

Cerebral palsy occurs at a rate of 1 in 323 children and is the most prevalent cause of childhood motor disability in the United States (Cerebral Palsy Guidance, 2025). Detection and intervention at an early age have been shown to improve neuroplasticity, muscle and bone development, and caregiver well-being (Novak et al., 2017). A preliminary risk assessment using the Hammersmith Infant Neurological Examination (HINE) has demonstrated 90% sensitivity and can be performed as early as 3 months of age (Romeo et al., 2024). To ensure appropriate screening and follow-up care of patients at risk for cerebral palsy, the Cerebral Palsy Screening Clinical Pathway provides guidance for the standardization of referrals to Physical and Occupational Therapy, Neurology, and/or Physical Medicine and Rehabilitation, the use of HINE and other diagnostic tests, and ensuring timely repeat testing and interventions.

Target Users

- Physicians (Neonatology, Neurology, Physical Medicine & Rehabilitation, Beacon Program, Primary Care Providers)
- Advanced Practice Nurses
- Occupational and Physical Therapists

Target Population

Inclusion Criteria

- Inpatients admitted to the neonatal intensive care unit and outpatients with risk factors for cerebral palsy

Exclusion Criteria

- Patients with a known progressive abnormal brain condition
- Patients previously diagnosed with cerebral palsy who have an established care plan
- Patients with developmental regression

Practice Recommendations

In lieu of a clinical practice guideline fully addressing the management of infants at risk for cerebral palsy, guidance from current pediatric literature was used in conjunction with the expert consensus of the Cerebral Palsy Screening Clinical Pathway Committee to inform guidance for diagnostic testing, referral to specialists, and follow-up care.

Additional Questions Posed by the Clinical Pathway Committee

No additional clinical questions were posed for this review.

Measures

- Utilization of the clinical pathway

Value Implications

The following improvements may increase value by reducing healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and families and reducing costs and resource utilization for healthcare facilities.

- Decreased number of patients with risk factors being lost to follow-up
- Increased standardization of screening for cerebral palsy, including appropriate consultation and referral to Neurology and Physical Medicine & Rehabilitation, as well as Physical and Occupational Therapy
- Increased appropriate communication with caregivers
- Decreased unwarranted variation in care

Organizational Barriers and Facilitators

Potential Barriers

- Variability in experience among clinicians
- Need for effective communication and coordination among clinicians and specialties
- Challenges with access to healthcare and health literacy faced by some families

Potential Facilitators

- Collaborative engagement across the continuum of clinical care settings and healthcare disciplines during clinical pathway development
- High rate of use of the clinical pathway

Bias Awareness

Bias awareness is our aim to recognize social determinants of health and minimize healthcare disparities, acknowledging that our unconscious biases can contribute to these inequities.

Order Sets

- There are no order sets associated with this clinical pathway.

Associated Policies

- There are no policies associated with this clinical pathway.

Educational Materials

- There are no educational materials associated with this clinical pathway.

Clinical Pathway Preparation

This pathway was prepared by the EBP Department in collaboration with the Cerebral Palsy Screening Clinical Pathway Committee, composed of content experts at Children's Mercy Kansas City. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Cerebral Palsy Screening Clinical Pathway Committee Members and Representation

- Ara Hall, MD | Neurology | Committee Chair
- Megan Blaufuss, OTR/L, MS, CPAM | Physical and Occupational Therapy | Committee Member
- Laura Brite, OTR/L, CNT, NTMTC | Physical and Occupational Therapy | Committee Member
- Melissa Ehling, MSN, APRN, FNP-BC, NNP-BC | Neonatology | Committee Member
- Marcie Files, MD | Neurology | Committee Member
- Rose Gelineau-Morel, MD | Neurology | Committee Member
- Emily Goodwin, MD, FAAP | Beacon Program | Committee Member
- Kimberly Hunter, APRN, NNP-BC, MSN | Neonatology | Committee Member
- Amy Knapitsch, MD | Neonatology | Committee Member
- Brittany McQuain, NNP | Neonatology | Committee Member
- Chaitali Mahajan, MD, MSCR, FAAP | Neonatology | Committee Member
- Diana Marchese, MD | Rehabilitation Medicine | Committee Member
- Deanna McPherson, NNP | Neonatology | Committee Member
- Denesh Ratnasingam, MD | Rehabilitation Medicine | Committee Member
- Sathya Vadivelu, DO | Rehabilitation Medicine | Committee Member
- Maggie Wright, MD, MPH, FAAP | Beacon Program | Committee Member

Patient/Family Committee Member

- Audra Paquette | Committee Member

EBP Committee Members

- Kathleen Berg, MD, FAAP | Evidence Based Practice
- Megan Gripka, MPH, MLS (ASCP) SM | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Neurology, Physical Medicine & Rehabilitation, Neonatology, Beacon Program, Physical and Occupational Therapy, and Evidence Based Practice.

Conflict of Interest

The contributors to the Cerebral Palsy Screening Clinical Pathway have no conflicts of interest to disclose related to the subject matter or materials discussed.

Approval Process

- This pathway was reviewed and approved by the EBP Department and the Cerebral Palsy Screening Clinical Pathway Committee after committee members garnered feedback from their respective divisions/departments. It was then approved by the Medical Executive Committee.

Review Requested

Department/Unit	Date Requested
Beacon Program	August 2025
Neonatology	August 2025
Neurology	August 2025
Physical and Occupational Therapy	August 2025
Physical Medicine and Rehabilitation	August 2025
Evidence Based Practice	August 2025

Version History

Date	Comments
September 2025	Version one – development of the inpatient and outpatient algorithms for cerebral palsy screening, along with communication guidance for caregivers of patients with risk factors for cerebral palsy

Date for Next Review

- 2028

Implementation & Follow-Up

- Once approved, the pathway was implemented and presented to appropriate care teams:
  - Announcements made to relevant departments
  - Additional institution-wide announcements were made via the hospital website and relevant huddles
  - Community clinics affiliated with CM received announcements via 'Provider Notes"
- Care measurements may be assessed and shared with appropriate care teams to determine if changes need to occur.
- Pathways are reviewed every 3 years (or sooner) and updated as necessary within the EBP Department at CMKC. Pathway committees are involved with every review and update.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the supporting documents and the power plan(s) that accompany the clinical pathway.

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It is impossible to anticipate all possible situations that may exist and to prepare clinical pathways for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.

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