Dizziness and Vertigo Ambulatory Clinical Pathway Synopsis

Dizziness and Vertigo Ambulatory Algorithm

Exclusion criteria:
- Acute illness with associated dizziness or vertigo (e.g., fever, dehydration)
- Syncope
- Known concussion or recent head injury (CMKC Concussion Clinical Pathway)
- Known Positional Orthostatic Tachycardia Syndrome (POTS)

Dizziness: General feeling of light-headedness, unsteadiness, or wooziness (not spinning)
Vertigo: Any sensation of motion and/or spinning. May see objects move around them.

Red Flags Necessitating Subspecialty Referral:
Cardiac:
- Cardiac symptoms occur with exertion
- Chest pain
- Shortness of breath

ENT:
*Call ENT **ASAP** for immediate referral for:*
- Vertigo with facial weakness
- Vertigo with sudden/acute hearing loss

Routine referral for:
- Vertigo with chronic/stable hearing loss
- Vertigo with Acute Otitis Media *(without facial weakness or sudden hearing loss)*
- Vertigo with vesicular ear lesions *(without facial weakness or sudden hearing loss)*

Neurologic:
- Abnormal neurological exam
- New onset ataxia or weakness
- Falling down

Vertigo management:
- Provide medications for motion sickness, nausea, and/or anxiety if needed
  - ***Note - only for short term use.*** Medication to suppress vertigo may prolong compensation, use with caution
- Non-medication options to help minimize symptoms include:
  - Peppermint (candy, gum, essential oils)
  - Ginger (ginger ale, ginger chew, ginger snap)
  - Weighted blanket

Patient presents with complaint of symptoms consistent with dizziness or vertigo

Obtain history and physical including:
- Patient's description of symptoms
- Timing of episodes
- Triggers (e.g., positional changes)
- Dietary history
- Menstrual history if applicable
- Neurologic changes
- Hearing concerns
- Medications
- Substance use
- Developmental history
- Mental health history
- Family history (migraines, hearing loss)
- Neurologic exam

Dietary History:
- Sodium
- Water
- Caffeine
- Dairy
- Supplements
- Energy drinks
- Protein
- Skipping meals

Consider 24 hr dietary recall or food diary

Are there any cardiac, neurologic, or ENT red flags? — Yes → Refer to appropriate subspecialty

No

Are the Orthostatic Vital Signs abnormal?

Abnormal orthostatic vitals
Patients BP or HR changes significantly upon standing
- Decrease of systolic BP ≥ 20 mmHg
- Decrease of diastolic BP ≥10 mmHg
- Increase in HR ≥ 30 bpm

**Increase in HR alone may be consistent with POTS, which is outside the scope of this pathway*

Abnormal orthostatic VS → Treatment is multi-factorial - provide specific goals for adequate:
- Hydration
- Sleep
- Nutrition
- Headache management
- Stress management
- Anxiety/depression management

Consider the following labs:
- POC glucose
- CBC
- Ferritin (optimize towards 50 ng/mL)
- Urine hCG, if applicable

→ Follow up with PCP as needed

Normal orthostatic VS → Are symptoms consistent with vertigo or dizziness?

Dizziness → Treatment is multi-factorial - provide specific goals for adequate: (Hydration, Sleep, Nutrition, Headache management, Stress management, Anxiety/depression management) **Consider the following labs:** (POC glucose, CBC, Ferritin (optimize towards 50 ng/mL), Urine hCG, if applicable) → Follow up with PCP as needed

Vertigo → Is vertigo intractable?

Yes → **Off Pathway**
- Refer to ED
- Urgent imaging and/or subspecialty consultation may be needed to rule out brainstem stroke, tumor, or other etiology

No →
- Initiate vertigo management
- Refer for vestibular therapy (PT at CMKC)

If symptoms persist, vestibular therapist will refer to:
- ENT (if associated hearing loss)
- Neurology/neurosurgery

QR code for mobile view

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.

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Objective of Clinical Pathway

To provide standard care options for patients with a diagnosis of dizziness or vertigo, including guidance for when to refer to a pediatric specialist.

Background

Pediatric epidemiology studies have assisted in defining the differences between dizziness and vertigo and share the following definitions: Dizziness is a general feeling of lightheadedness, unsteadiness, or wooziness (not spinning), whereas vertigo is a subjective sensation of motion and/or spinning (Beretti & Desnous, 2023; Haripriya et al., 2021; Karatoprak et al., 2020). Children may have difficulty describing symptoms, thus impacting treatment and referrals (Beretti & Desnous, 2023; Brodsky et al., 2020; Haripriya et al., 2021). Obtaining an accurate patient history is essential to define the symptoms, rule out important alternative diagnoses, and employ effective treatment strategies.

Vertigo often indicates vestibular dysfunction. Vestibular disorders are common in adults, though reported prevalence in children ranges between 0.7% and 15% (Brodsky et al., 2020; Gioacchini et al., 2014; Li et al., 2016). There is a large volume of scientific literature covering adult vestibular dysfunction. However, this evidence is lacking among children and adolescents. The signs and symptoms indicative of vestibular dysfunction vary widely among children and may be mislabeled as dizziness or imbalance rather than vertigo (Brodsky et al., 2020). Vestibular therapy can be a valuable first step in treatment, with subsequent referral to Otolaryngology and/or Neurology if symptoms do not improve.

The differential diagnosis for dizziness is broad, including, but not limited to, dehydration, anemia, substance use, and nutritional deficiencies. A detailed history and targeted work-up can identify the cause and lead to successful management. Both vertigo and dizziness can cause disruption in daily activities, inability to attend school, and social withdrawal (Haripriya et al., 2021). Clinicians are challenged to diagnose dizziness or vertigo definitively due to the degree of variation in presentations and the numerous potential underlying causes. To address these, the Dizziness and Vertigo Ambulatory Clinical Pathway offers guidance on taking the history, distinguishing vertigo from dizziness, and determining when subspecialty evaluation may be needed.

Target Users

- Physicians (Primary Care, Ambulatory Clinics, Pediatricians, Fellows, Residents)
- Advanced practice providers
- Nurses
- Physical Therapists

Target Population

Inclusion Criteria

- Patient complaining of dizziness or vertigo

Exclusion Criteria

- Patients with:
    - Acute illness
    - Syncope
    - Known concussion or recent head injury

Practice Recommendations

In lieu of a clinical practice guideline fully addressing the management of dizziness and vertigo in pediatric and adolescent patients, guidance from pediatric otolaryngology and neurology literature was used in conjunction with the expert consensus of the Dizziness and Vertigo Ambulatory Clinical Pathway Committee to inform the assessment, acute management, and referral guidance in this pathway.

Additional Questions Posed by the Clinical Pathway Committee

No clinical questions were posed for this review.

Measures

- Utilization of the Dizziness-Vertigo Clinical Pathway
- Timely access to targeted care (i.e., therapies and/or specialty provider care)

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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 risk of overdiagnosis
- Decreased risk of overtreatment (i.e., treatment for vertigo when treatment for general dizziness or POTS is more appropriate)
- Decreased frequency of misdirected specialty referrals
- Decreased unwarranted variation in care

Organizational Barriers and Facilitators

Potential Barriers

- Variability of an acceptable level of risk among providers
- Challenges with follow-up faced by some families

Potential Facilitators

- Collaborative engagement across care continuum settings during clinical pathway development
- Anticipated high rate of use of the clinical pathway
- Standardized referral process to specialty care

Bias Awareness

This pathway aims to recognize bias awareness in social determinants of health and minimize healthcare disparities while realizing that our unconscious bias can contribute to these disparities.

Power Plans

- There are no associated power plans with this pathway

Associated Policies

- There are no associated policies with this pathway

Clinical Pathway Preparation

This pathway was prepared by the Evidence Based Practice (EBP) Department in collaboration with the Dizziness and Vertigo Ambulatory 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.

Dizziness and Vertigo Ambulatory Clinical Pathway Committee Members and Representation

- Trisha Williams, RN, APRN, CPN, CPNP | Otolaryngology | Committee Co-Chair
- Lara Koral, MSN, FNP-BC | Neurology | Committee Co-Chair
- Katie Senn, MD | General Academic Pediatrics | Committee Member
- Rachel Whitfield, MSN, APRN, FNP-C | Adolescent Medicine | Committee Member
- Stacey Shoman, APRN | Premier Pediatrics | Committee Member
- Andrea Thorne, PT | Physical & Occupational Therapy | Committee Member

Consultants

- Stephani Stancil, PhD, APRN | Adolescent Medicine, Clinical Pharmacology and Toxicology
- Julie Martin, RN, MSN, FNP-BC, PNP-BC | Heart Center
- Laura Martis, MSN, RN, CPNP-AC | Heart Center
- Lindsey Malloy Walton, DO, MPH | Heart Center
- Amanda Nedved, MD | Urgent Care
- Gina Jones, DO | Neurology
- Trevor Gerson, MD | Neurology
- Joseph Ursick, MD | Otolaryngology
- Michael Puricelli, MD | Otolaryngology

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EBP Committee Members

- Kathleen Berg, MD, FAAP | Hospitalist, Evidence Based Practice
- Andrea Melanson, OTD, OTR/L | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Neurology, Otolaryngology, Adolescent Medicine, General Pediatrics, Premier Pediatrics (community provider), and Evidence Based Practice.

Conflict of Interest

The Dizziness and Vertigo Ambulatory Clinical Pathway contributors 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 Dizziness and Vertigo Ambulatory Clinical Pathway Committee, Content Expert Departments/Divisions, and the EBP Department, after which the Medical Executive Committee approved it.
- Pathways are reviewed and updated as necessary every 3 years within the EBP Department at CMKC. Content expert teams are involved with every review and update.

Review Requested

Department/Unit	Date Obtained
Otolaryngology	April 2025
Neurology	March 2025
General Academic Pediatrics	March 2025
Adolescent Medicine	March 2025
Community Providers – Premier Pediatrics	March 2025
Evidence Based Practice	March 2025

Version History

Date	Comments
April 2025	Version one – developed algorithm and synopsis

Date for Next Review

- April 2028

Implementation & Follow-Up

- Once approved, the pathway was presented to appropriate care teams and implemented. Care measurements will be assessed and shared with appropriate care teams to determine if changes need to occur.
- Education was provided to all stakeholders:
  - Providers from Cardiology, Otolaryngology, Neurology, General Pediatrics, Premier Pediatrics, and other community providers
  - Resident physicians
- Additional institution-wide announcements were made via email, the hospital website, and relevant huddles.

Disclaimer

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

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