**MEASURE #5: Scoliosis Evaluation Ordered**

*MUSCULAR DYSTROPHY*

### Measure Description
All visits for patients with a diagnosis of a muscular dystrophy (MD) where the patient had a scoliosis evaluation* ordered.

### Measure Components

<table>
<thead>
<tr>
<th>Numerator Statement</th>
<th>Patients who had a scoliosis evaluation ordered.*</th>
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<tbody>
<tr>
<td></td>
<td>*Scoliosis evaluation: clinical evaluation, x-rays ordered, referral for orthopedic consultation or to a qualified clinician.</td>
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<table>
<thead>
<tr>
<th>Denominator Statement</th>
<th>All visits for patients with a diagnosis of a muscular dystrophy.</th>
</tr>
</thead>
</table>

**Exceptions:**
- Medical reason for not ordering a scoliosis evaluation (i.e., patient cannot tolerate evaluation, MD phenotype not associated with scoliosis)
- Patient reason for not ordering a scoliosis evaluation (i.e., patient or family caregiver declines evaluation)
- System reason for not ordering a scoliosis evaluation (i.e., patient has no insurance coverage for x-rays or referral for consultation evaluation)

### Supporting Guideline & Other References
- I1. Clinicians should monitor MD patients for the development of spinal deformities to prevent resultant complications and preserve function. (Level B)¹
- I2. Clinicians should refer MD patients with musculoskeletal deformities of the spine to an orthopedic spine surgeon for monitoring and surgical intervention if deemed necessary to maintain normal posture, assist mobility, maintain cardiopulmonary function, and optimize quality of life. (Level B)¹
- Clinical assessment of respiratory health should be part of every medical consultation for children with neuromuscular weakness (NMW) and should be directed towards identifying progressive muscle weakness, ability to cope with respiratory infection, aspiration, progression of scoliosis and sleep-disordered breathing. [D]²
- Children with NMW who require surgery (including scoliosis surgery) should be assessed by a multidisciplinary team prior to any intervention. [GPP]²
- The effect of wearing a spinal brace on respiratory function should be assessed and weighed against the limited evidence of benefit in terms of affecting final scoliosis severity. [D]²
- The primary consideration when planning surgery for children with scoliosis associated with NMW should be comfort and quality of life. [GPP]²
- Wearing a rigid spinal bracing causes a reduction in both tidal ventilation and vital capacity in children with neuromuscular disease (evidence level 3). In boys with Duchenne muscular dystrophy (DMD), bracing may slow the progression of scoliosis, but does not affect final scoliosis severity (evidence level 3). The effect of wearing a spinal brace on respiratory functions should be assessed and weighed against the limited evidence of benefit in terms of affecting final scoliosis severity. [D]² The primary consideration when planning surgery for children with scoliosis associated with NMW should be comfort and quality of life.²
Spinal care should involve an experienced spinal surgeon, and comprises scoliosis monitoring, support of spinal/pelvic symmetry and spinal extension by the wheelchair seating system, and (in patients using glucocorticoids, in particular) monitoring for painful vertebral body fractures. (Consensus)

Monitoring for scoliosis should be by clinical observation through the ambulatory phase, with spinal radiography warranted only if scoliosis is observed. In the non-ambulatory phase, clinical assessment for scoliosis is essential at each visit. Spinal radiography is indicated as a baseline assessment for all patients around the time that wheelchair dependency begins with a sitting anteroposterior full-spine radiograph and lateral projection film. An anteroposterior spinal radiograph is warranted annually for curves of less than 15° to 20° and every 6 months for curves of more than 20°, irrespective of glucocorticoid treatment, up to skeletal maturity. (Consensus)

It is important to find out whether a child with DMD belongs to the small minority that does not develop a severe scoliosis. For this purpose, the respiratory functions should be monitored in children with DMD, since the vital capacity is a possible indicator of the progression of scoliosis. (Level 2)

Rationale for the Measure
There is a risk of evolving musculoskeletal spine deformities, such as scoliosis, kyphosis, or rigid spine syndrome, in various dystrophies. These musculoskeletal deformities can result in discomfort and functional impairment, interfering with gait, activities of daily living, and pulmonary function. The proper management of musculoskeletal spine deformities is important in order to reduce discomfort, preserve mobility or ability to sit in a wheelchair, and reduce pulmonary complications.

Gap in Care
There is limited data on a gap in care for scoliosis evaluation with a marked absence of randomized controlled trials on the evaluation or treatment of scoliosis. However, severe scoliosis causes discomfort, pain and compromises respiratory function. Surgery is the primary treatment for scoliosis but there are uncertainties as to the necessity and timing of the surgery.

Opportunity for Improvement
The Dutch Guideline on the Treatment of Scoliosis in DMD focused on recommendations for professionals managing the care of patients with scoliosis due to neuromuscular disease, DMD or SMA2. The guideline supports multidisciplinary approach and encourages collaboration between the different specialties involved.

### Measure Designation

| Measure purpose          | Quality improvement  
|--------------------------|----------------------
|                          | Accountability       
| Type of measure          | Process              
| Level of Measurement     | Individual practitioner  
| Care setting             | Outpatient visits    
|                          | Nursing Home         
|                          | Home Services        
|                          | Rehabilitation Services  
| Data source              | Electronic health record (EHR) data  
|                          | Administrative Data/Claims (inpatient or outpatient claims)  
|                          | Administrative Data/Claims Expanded (multiple-source)  
|                          | Paper medical record  

### Technical Specifications: Administrative/Claims Data (Under Development)

Administrative claims data collection requires users to identify the eligible population (denominator) and numerator using codes recorded on claims or billing forms (electronic or paper). Users report a rate based on all patients in a given practice for whom data are available and who meet the eligible population/denominator criteria.

The specifications listed below are those needed for performance calculation. Additional CPT II codes may be required depending on how measures are implemented. (Reporting vs. Performance)

<table>
<thead>
<tr>
<th>Denominator (Eligible Population)</th>
<th>ICD-9 and ICD-10 Diagnosis Codes:</th>
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<tbody>
<tr>
<td></td>
<td>ICD-9 Code</td>
</tr>
<tr>
<td>359 Muscular dystrophies and other myopathies</td>
<td></td>
</tr>
<tr>
<td>359.0 Congenital hereditary muscular dystrophy</td>
<td>G71.2 Congenital myopathies</td>
</tr>
<tr>
<td>359.1 Hereditary progressive muscular dystrophy</td>
<td>G71.0 Muscular dystrophy</td>
</tr>
<tr>
<td>359.2 Myotonic disorders</td>
<td></td>
</tr>
<tr>
<td>359.21 Myotonic muscular dystrophy</td>
<td>G71.11 Myotonic muscular dystrophy</td>
</tr>
<tr>
<td>359.22 Myotonia congenital</td>
<td>G71.12 Myotonia congenital</td>
</tr>
<tr>
<td>359.23 Myotonic chondrodystrophy</td>
<td>G71.13 Myotonic chondrodystrophy</td>
</tr>
<tr>
<td>359.8 Other myopathies</td>
<td></td>
</tr>
<tr>
<td>359.89 Other myopathies</td>
<td>G72.89 Other specified myopathies</td>
</tr>
<tr>
<td>359.9 Myopathy, unspecified</td>
<td>G72.9 Myopathy, unspecified</td>
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</tbody>
</table>

**AND**

CPT E/M Service Code:
- 99201, 99202, 99203, 99204, 99205 (Office or other outpatient visit-New Patient);
- 99211, 99212, 99213, 99214, 99215 (Office or other outpatient visit-Established Patient);
- 99241, 99242, 99243, 99244, 99245 (Office or Other Outpatient Consultation-New or Established Patient);
- 99304, 99305, 99306 (Initial Nursing Facility Care);
- 99307, 99308, 99309, 99310 (Subsequent Nursing Facility Care);
- 99319 (Other Nursing Facility Services)