

## SPINRAZA™ (NUSINERSEN)

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### Commercial Policy

- [Spinraza™ \(Nusinersen\)](#)

### INSTRUCTIONS FOR USE

This Drug Policy provides assistance in interpreting UnitedHealthcare benefit plans. When deciding coverage, the federal, state or contractual requirements for benefit plan coverage must be referenced. The terms of the federal, state or contractual requirements for benefit plan coverage may differ greatly from the standard benefit plan upon which this Drug Policy is based. In the event of a conflict, the federal, state or contractual requirements for benefit plan coverage supersedes this Drug Policy. All reviewers must first identify member eligibility, any federal or state regulatory requirements, and the contractual requirements for benefit plan coverage prior to use of this Drug Policy. Other Policies and Coverage Determination Guidelines may apply. UnitedHealthcare reserves the right, in its sole discretion, to modify its Policies and Guidelines as necessary. This Drug Policy is provided for informational purposes. It does not constitute medical advice.

UnitedHealthcare may also use tools developed by third parties, such as the MCG™ Care Guidelines, to assist us in administering health benefits. The MCG™ Care Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

### BENEFIT CONSIDERATIONS

Before using this policy, please check the federal, state or contractual requirements for benefit coverage.

### COVERAGE RATIONALE

**Spinraza™ (nusinersen) is proven and medically necessary for:**<sup>1</sup>

1. **The treatment of Spinal Muscular Atrophy (SMA) in patients who meet ALL of the following criteria:**
  - a. **For initial therapy**, ALL of the following:
    - (1) ONE of the following:
      - (a) Diagnosis of spinal muscular atrophy type I, II, or III by a neurologist with expertise in the diagnosis of SMA
      - (b) Diagnosis of spinal muscular atrophy type I, II, or III by a physician in consultation with a neurologist with expertise in the diagnosis of SMA;
    - and**
    - (2) Submission of medical records (e.g., chart notes, laboratory values) confirming BOTH of the following:
      - (a) The mutation or deletion of genes in chromosome 5q resulting in ONE of the following:
        - i. Homozygous gene deletion or mutation (e.g., homozygous deletion of exon 7 at locus 5q13);<sup>1,2</sup>
        - or**
        - ii. Compound heterozygous mutation (e.g., deletion of SMN1 exon 7 [allele 1] and mutation of SMN1 [allele 2]);
      - and**
      - (b) Patient has at least 2 copies of SMN2;

**and**

- (3) Patient is not dependent on either of the following:  
(a) Invasive ventilation or tracheostomy  
(b) Use of non-invasive ventilation beyond use for naps and nighttime sleep;

**and**

- (4) Submission of medical records (e.g., chart notes, laboratory values) of the baseline exam of at least ONE of the following exams (based on patient age and motor ability) to establish baseline motor ability:  
(a) Hammersmith Infant Neurological Exam (HINE)<sup>1,8,12</sup> (infant to early childhood)  
(b) Hammersmith Functional Motor Scale Expanded (HFMSE)<sup>1,9,13-14</sup>  
(c) Upper Limb Module (ULM) Test (Non ambulatory)<sup>1,9</sup>  
(d) Children's Hospital of Philadelphia Infant Test of Neuromuscular Disorders (CHOP INTEND);<sup>1,8</sup>

**and**

- (5) ONE of the following:  
(a) Spinraza is prescribed by a neurologist with expertise in the treatment of SMA  
(b) Spinraza is prescribed by a physician in consultation with a neurologist with expertise in the treatment of SMA;

**and**

- (6) Spinraza is to be administered intrathecally by, or under the direction of, healthcare professionals experienced in performing lumbar punctures; **and**  
(7) Spinraza dosing for SMA is in accordance with the United States Food and Drug Administration approved labeling: maximum dosing of 12mg for each loading dose; **and**  
(8) Initial authorization will be for no more than 4 loading doses.

b. **For continuation therapy**, ALL of the following:

- (1) ONE of the following:

- (a) Diagnosis of spinal muscular atrophy type I, II, or III by a neurologist with expertise in the diagnosis of SMA  
(b) Diagnosis of spinal muscular atrophy type I, II, or III by a physician in consultation with a neurologist with expertise in the diagnosis of SMA;

**and**

- (2) Submission of medical records (e.g., chart notes, laboratory values) confirming BOTH of the following:  
(a) The mutation or deletion of genes in chromosome 5q resulting in ONE of the following:  
i. Homozygous gene deletion or mutation (e.g., homozygous deletion of exon 7 at locus 5q13);<sup>1,2</sup>  
**or**  
ii. Compound heterozygous mutation (e.g., deletion of SMN1 exon 7 [allele 1] and mutation of SMN1 [allele 2]);

**and**

- (b) Patient has at least 2 copies of SMN2;

**and**

- (3) Patient is not dependent on either of the following:  
(a) Invasive ventilation or tracheostomy  
(b) Use of non-invasive ventilation beyond use for naps and nighttime sleep;

**and**

- (4) Submission of medical records (e.g., chart notes, laboratory values) with the most recent results (< 1 month prior to request) documenting a positive clinical response **from pretreatment baseline status** to Spinraza therapy as demonstrated by at least ONE of the following exams:

- (a) HINE milestones:

- i. One of the following:

- (i) Improvement or maintenance of previous improvement of at least 2 point (or maximal score) increase in ability to kick  
(ii) Improvement or maintenance of previous improvement of at least 1 point increase in any other HINE milestone (e.g., head control, rolling, sitting, crawling, etc.), excluding voluntary grasp;

**and**

- ii. One of the following:

- (i) The patient exhibited improvement or maintenance of previous improvement in more HINE motor milestones than worsening, from pretreatment baseline (net positive improvement)  
(ii) Achieved and maintained any new motor milestones when they would otherwise be unexpected to do so (e.g., sit unassisted, stand, walk);

**or**

- (b) HFMSE: One of the following:

- i. Improvement or maintenance of previous improvement of at least a 3 point increase in score from pretreatment baseline

- ii. Patient has achieved and maintained any new motor milestone from pretreatment baseline when they would otherwise be unexpected to do so;
- or**
- (c) ULM: One of the following:
  - i. Improvement or maintenance of previous improvement of at least a 2 point increase in score from pretreatment baseline
  - ii. Patient has achieved and maintained any new motor milestone from pretreatment baseline when they would otherwise be unexpected to do so;
- or**
- (d) CHOP INTEND: One of the following:
  - i. Improvement or maintenance of previous improvement of at least a 4 point increase in score from pretreatment baseline
  - ii. Patient has achieved and maintained any new motor milestone from pretreatment baseline when they would otherwise be unexpected to do so;
- and**
- (5) ONE of the following:
  - (a) Spinraza is prescribed by a neurologist with expertise in the treatment of SMA
  - (b) Spinraza is prescribed by a physician in consultation with a neurologist with expertise in the treatment of SMA;
- and**
- (6) Spinraza is to be administered intrathecally by, or under the direction of, healthcare professionals experienced in performing lumbar punctures; **and**
- (7) Spinraza dosing for SMA is in accordance with the United States Food and Drug Administration approved labeling: maximum dosing of 12mg every 4 months, starting 4 months after the last loading dose; **and**
- (8) Reauthorization will be for no more than 3 maintenance doses (12 months).

**Spinraza is not proven or medically necessary for spinal muscular atrophy without chromosome 5q mutations or deletions.<sup>1</sup>**

#### U.S. FOOD AND DRUG ADMINISTRATION (FDA)

Spinraza is a survival motor neuron-2 (SMN2)-directed antisense oligonucleotide indicated for the treatment of spinal muscular atrophy (SMA) in pediatric and adult patients.

#### BACKGROUND

Spinal muscular atrophy (SMA) is a rare, autosomal recessive neuromuscular disease that affects the survival of motor neurons of the spinal cord.<sup>2</sup> SMA is caused by the deletion/mutation of the SMN1 gene.<sup>2</sup> The estimated annual incidence of SMA is 5.1 to 16.6 cases per 100,000 live births. Approximately 1/40 to 1/60 people are SMA carriers, equating to 3.5 to 5.2 million and 12 to 18 million individuals in the United States and Europe, respectively.<sup>3-6</sup> SMA is characterized by the degeneration of motor neurons of the spinal cord, resulting in hypotonia and muscle weakness. Five subtypes of SMA (0-IV) have been described based on age of symptom onset and motor function achieved.<sup>7</sup>

Spinraza™ (nusinersen) is a modified antisense oligonucleotide designed to treat SMA caused by mutations in chromosome 5q that lead to SMN protein deficiency. Nusinersen binds to a specific sequence in the intron downstream of exon 7 of the SMN2 transcript. Using in vitro assays and studies in transgenic animal models of SMA, nusinersen was shown to increase exon 7 inclusion in SMN2 messenger ribonucleic acid (mRNA) transcripts and production of full-length SMN protein.<sup>1</sup>

#### APPLICABLE CODES

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by federal, state or contractual requirements and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Coverage Determination Guidelines may apply.

ICD-10 Diagnosis Code	Description
G12.0	Infantile spinal muscular atrophy, type I [Werdnig-Hoffmann]
G12.1	Other inherited spinal muscular atrophy

## CLINICAL EVIDENCE

A Phase III, multicenter, randomized, double-blind, sham-procedure controlled study assessed the clinical efficacy and safety of nusinersen, administered intrathecally in 121 symptomatic infants,  $\leq 7$  months of age at the time of first dose, diagnosed with SMA (symptom onset before 6 months of age). Patients were randomized 2:1 to receive either nusinersen or sham injection. A planned interim efficacy analysis was conducted based on patients who died, withdrew, or completed at least 183 days of treatment. Of the 82 patients included in the interim analysis, 44% were male and 56% were female. Age at first treatment ranged from 30 to 262 days (median 181). Eighty-seven (87%) of subjects were Caucasian, 2% were Black, and 4% were Asian. Length of treatment ranged from 6 to 442 days (median 261 days). Baseline demographics were balanced between the nusinersen and control groups with the exception of age at first treatment (median age 175 vs. 206 days, respectively). The nusinersen and control groups were balanced with respect to gestational age, birth weight, disease duration, and SMN2 copy number (2 copies in 98% of subjects in both groups). Median disease duration was 14 weeks. There was some imbalance in age at symptom onset with 88% of subjects in the nusinersen group and 77% in the control group experiencing symptoms within the first 12 weeks of life. The primary endpoint assessed at the time of interim analysis was the proportion of responders: patients with an improvement in motor milestones according to Section 2 of the Hammersmith Infant Neurologic Exam (HINE). A treatment responder was defined as any patient with at least a 2-point increase (or maximal score of 4) in ability to kick (consistent with improvement by at least 2 milestones), or at least a 1-point increase in the motor milestones of head control, rolling, sitting, crawling, standing or walking (consistent with improvement by at least 1 milestone). To be classified as a responder, patients needed to exhibit improvement in more categories of motor milestones than worsening. Of the 82 patients who were eligible for the interim analysis, a statistically significantly greater percentage of patients achieved a motor milestone response in the nusinersen group compared to the sham-control group.<sup>1, 8</sup>

A Phase III multicenter, double-blind, randomized, sham-procedure controlled study assessed the clinical efficacy and safety of nusinersen in patients with later-onset SMA consistent with Type II SMA. Subjects were randomized 2:1 to receive intrathecal nusinersen or a sham procedure control, respectively. Inclusion criteria included diagnosis with SMA, have clinical signs and symptoms consistent with SMA at greater than 6 months of age, be able to sit independently, but never able to walk independently and have a HFMSE score greater than or equal to 10 and less than or equal to 54 at Screening. The primary endpoint is change from baseline in HFMSE score (at 15 months). Secondary Endpoints are (at 15 months): proportion of subjects who achieve a 3-point increase from baseline in HFMSE score, proportion of subject that achieve any new motor milestone, number of motor milestones achieved per subject, change from baseline in Upper Limb Module Test, proportion of subjects that achieve standing alone, proportion of subject that achieve walking with assistance. In a pre-planned interim analysis, a significant difference ( $p = 0.0000002$ ) of 5.9 points in HFMSE was observed at 15 months between patients given nusinersen ( $n=84$ ) compared to the sham-procedure control ( $n=42$ ). Patients receiving nusinersen experienced a mean improvement of 4.0 points in the HFMSE compared to a mean decrease of 1.9 points in the sham procedure control group (5). A change of  $\geq 3$  points in the HFMSE has previously been determined to be clinically important. Results for other endpoints were consistent with a favorable response to nusinersen compared to sham-procedure control. Adverse events were mostly considered to be related to SMA disease, common events found in the general population, or events related to the lumbar puncture procedure. No patients discontinued the study. Nusinersen was well tolerated with a favorable safety profile.<sup>9</sup>

The results of the controlled trial in infantile-onset SMA patients were supported by open-label uncontrolled trials conducted in symptomatic SMA patients who ranged in age from 30 days to 15 years at the time of first dose, and in presymptomatic patients, who ranged in age from 8 days to 42 days at the time of first dose. The patients in these studies had or were likely to develop Type 1, 2, or 3 SMA. Some patients achieved milestones such as ability to sit unassisted, stand, or walk when they would otherwise be unexpected to do so, maintained milestones at ages when they would be expected to be lost, and survived to ages unexpected considering the number of SMN2 gene copies of patients enrolled in the studies.<sup>10,11</sup>

## CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Medicare does not have a National Coverage Determination (NCD) for Spinraza™ (nusinersen). Local Coverage Determinations (LCDs) do not exist at this time.

Medicare covers outpatient (Part B) drugs that are furnished "incident to" a physician's service provided that the drugs are not usually self-administered by the patients who take them. See the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals at <http://www.cms.hhs.gov/manuals/Downloads/bp102c15.pdf>. (Accessed January 4, 2017)

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#### POLICY HISTORY/REVISION INFORMATION

Date	Action/Description
05/01/2017	<ul style="list-style-type: none"> <li>• New policy</li> </ul>